The OIL and GAS JOURNAL

PRODUCING REFINING MARKETING

VOL. 23. NO. 39 TULSA, OKLAHOMA, FEBRUARY 19, 1925

Copyright, 1925, by The Petroleum Publishing Co.

TABLE OF CONTENTS

SPECIAL ARTICLES

Crude Production Trend Now Upward 19
By Andrew M. Rowley
Little change expected, however, until wildcatting bears fruit. Price increases stimulate drilling.

Efficiency in Production of Oil 21
By James McIntyre
Recent questionnaire leads to observations on tests that have been made with varying results.

Iowa Independent Dealers Hear F. A. Pielsticker 21

Congress Starts New Gasoline Quiz 22
By Charles E. Kern
District of Columbia Committee begins national inquiry and Senate directs Federal Trade Commission to begin anew.

Missouri Attorney General Files Answer to Standard .. 22

The Producer's Part in Conservation 23
By Charles E. Bowles
Despite talk of overproduction only one year since 1918 when United States produced more than it consumed.

What Fuel Oil Is Worth (Editorial) 24

Engineers Hear Doherty, Pogue and Uren 26
By L. M. Fanning

Need for Oil Awakens Wildcatters 26
By George D. O'Neill
Oklahoma and Kansas will witness revival of test work this year. Bulk of "play" somewhat localized.

Active Drilling Campaign in Venezuela (Photographs) 36
Venezuela Oil Concessions, Lago Petroleum and Venezuela Gulf Companies pressing operations around Lake Maracaibo.

Scientists Aid to Petroleum Engineer (Illustrated) 54
By Stanley C. Herold
Investigations in Physics, Chemistry and Mathematics valuable in considering oil and gas reservoirs.

Group Appraisals of Oil Properties (Illustrated) 86
By Charles S. Larkey and Richard T. Bright
Time-saving method suggested for making analytical calculations on producing valuations.

Faith Is Retained in Sweetgrass Arch (Map) 88
By F. C. Platt
Montana petroleum engineer looks for other fields than Sunburst, low priced acreage, and good market.

Sites for Natural Gasoline Plants 109
By Frank B. Peterson
Locations considered in connection with gas supply, disposal of products and terrain.

FIELD OPERATIONS

Oklahoma 30
By C. D. Lockwood

Kansas 32
By C. D. Lockwood

Late Fields 28

California 40
By L. P. Stockman

North Central Texas 42
By Staff Correspondent

Rocky Mountain Area 42
By Frank B. Taylor

Gulf Coast 44
By P. L. McGreal

Mexico 44
By George Blardone

Canada 46
By Victor Lauriston

North Louisiana-Arkansas 48
By M. L. Vaughn

East Central Texas 48
By Staff Correspondent

Pennsylvania-West Virginia 50
By D. S. Wakenight

Kentucky-Tennessee 52
By Vern T. Whitney

Central West 52
By Whit

REFINING AND MARKETING

Refined Market Quiet in Oklahoma 20
By C. O. Willson
Little activity in spot market. Gasolines and kerosenes advanced following latest change in crude and tank wagon schedules.

Refining and Marketing News 108

Kansas City to Entertain Western Refiners 108

Chicago Jobbers Reluctant Buyers 111
By J. B. Waldo

Refined Markets in East Continue Firm 111
By N. O. Fanning

Refined and Crude Prices 112-113

Tank Wagon Quotations 114

ARTICLES OF GENERAL INTEREST

The Advertisers' Index 17

Men Known in Oildom and Personals 56

Equipment and Supplies 58

Pipe Mill Business Improving 58
By B. E. V. Luty

Natural Gas Developments 60

Receipts by Water at Atlantic Ports 80
By N. O. Fanning

December Gulf Port Shipments 84

Classified Want Advertisements 102-103-104

Oil Securities React During Week 106
By N. O. Fanning

Description of Osage Lands to Be Sold 116

Osage Sale Action Shows Government Policy 122

Domestic Gasoline Consumption 126
By L. M. Fanning

Detailed Operations in Eastern Fields 131

Crude Petroleum Statistics 136

BE A REGULAR READER

The OIL and GAS JOURNAL Tulsa, Okla.

You are hereby directed to mail The Oil and Gas Journal to me for.....year. Enclosed find remittance $.....

Classify my interests as checked by me.

.....Producing .....Refining

.....Equipment .....Marketing

Name.....

Address.....

City.....

$6 a Year

$3 6 Months

The OIL and GAS JOURNAL

PRODUCING REFINING MARKETING

VOL. 23. NO. 39 TULSA, OKLAHOMA, FEBRUARY 19, 1925

Copyright, 1925, by The Petroleum Publishing Co.

TABLE OF CONTENTS

SPECIAL ARTICLES

Crude Production Trend Now Upward 19
By Andrew M. Rowley
Little change expected, however, until wildcatting bears fruit. Price increases stimulate drilling.

Efficiency in Production of Oil 21
By James McIntyre
Recent questionnaire leads to observations on tests that have been made with varying results.

Iowa Independent Dealers Hear F. A. Pielsticker 21

Congress Starts New Gasoline Quiz 22
By Charles E. Kern
District of Columbia Committee begins national inquiry and Senate directs Federal Trade Commission to begin anew.

Missouri Attorney General Files Answer to Standard .. 22

The Producer's Part in Conservation 23
By Charles E. Bowles
Despite talk of overproduction only one year since 1918 when United States produced more than it consumed.

What Fuel Oil Is Worth (Editorial) 24

Engineers Hear Doherty, Pogue and Uren 26
By L. M. Fanning

Need for Oil Awakens Wildcatters 26
By George D. O'Neill
Oklahoma and Kansas will witness revival of test work this year. Bulk of "play" somewhat localized.

Active Drilling Campaign in Venezuela (Photographs) 36
Venezuela Oil Concessions, Lago Petroleum and Venezuela Gulf Companies pressing operations around Lake Maracaibo.

Scientists Aid to Petroleum Engineer (Illustrated) 54
By Stanley C. Herold
Investigations in Physics, Chemistry and Mathematics valuable in considering oil and gas reservoirs.

Group Appraisals of Oil Properties (Illustrated) 86
By Charles S. Larkey and Richard T. Bright
Time-saving method suggested for making analytical calculations on producing valuations.

Faith Is Retained in Sweetgrass Arch (Map) 88
By F. C. Platt
Montana petroleum engineer looks for other fields than Sunburst, low priced acreage, and good market.

Sites for Natural Gasoline Plants 109
By Frank B. Peterson
Locations considered in connection with gas supply, disposal of products and terrain.

FIELD OPERATIONS

Oklahoma 30
By C. D. Lockwood

Kansas 32
By C. D. Lockwood

Late Fields 28

California 40
By L. P. Stockman

North Central Texas 42
By Staff Correspondent

Rocky Mountain Area 42
By Frank B. Taylor

Gulf Coast 44
By P. L. McGreal

Mexico 44
By George Blardone

Canada 46
By Victor Lauriston

North Louisiana-Arkansas 48
By M. L. Vaughn

East Central Texas 48
By Staff Correspondent

Pennsylvania-West Virginia 50
By D. S. Wakenight

Kentucky-Tennessee 52
By Vern T. Whitney

Central West 52
By Whit

REFINING AND MARKETING

Refined Market Quiet in Oklahoma 20
By C. O. Willson
Little activity in spot market. Gasolines and kerosenes advanced following latest change in crude and tank wagon schedules.

Refining and Marketing News 108

Kansas City to Entertain Western Refiners 108

Chicago Jobbers Reluctant Buyers 111
By J. B. Waldo

Refined Markets in East Continue Firm 111
By N. O. Fanning

Refined and Crude Prices 112-113

Tank Wagon Quotations 114

ARTICLES OF GENERAL INTEREST

The Advertisers' Index 17

Men Known in Oildom and Personals 56

Equipment and Supplies 58

Pipe Mill Business Improving 58
By B. E. V. Luty

Natural Gas Developments 60

Receipts by Water at Atlantic Ports 80
By N. O. Fanning

December Gulf Port Shipments 84

Classified Want Advertisements 102-103-104

Oil Securities React During Week 106
By N. O. Fanning

Description of Osage Lands to Be Sold 116

Osage Sale Action Shows Government Policy 122

Domestic Gasoline Consumption 126
By L. M. Fanning

Detailed Operations in Eastern Fields 131

Crude Petroleum Statistics 136

BE A REGULAR READER

The OIL and GAS JOURNAL Tulsa, Okla.

You are hereby directed to mail The Oil and Gas Journal to me for.....year. Enclosed find remittance $.....

Classify my interests as checked by me.

.....Producing .....Refining

.....Equipment .....Marketing

Name.....

Address.....

City.....

$6 a Year

$3 6 Months

Crude Production Trend Now Upward

Average daily production in United States week ended Feb. 14, 1,916,403 bbls. Gain from previous week, 1,975 bbls.

Little Change Expected, However, Until Wildcatting Bears Fruit. Price Increases Stimulate Drilling

Highest daily average estimated production last year, week ended August 23, 2,057,319 bbls. Lowest January 12, 1,871,143 bbls.

By Andrew M. Rowley

For the first time since the Wortham Field in Texas reached its peak in the middle of January, crude oil production for the entire United States showed an increase during last week, gains in Oklahoma, Kansas, North Central Texas, the Eastern fields and Southwest Texas more than offsetting the decline in East Central Texas where the Wortham Field is located. The prediction made some time ago that the decline in production apparently had been halted has been verified and further material decreases in production should not be expected.

Wortham, which was responsible for the increases in crude oil output since it was discovered last November, also was the cause of the declines registered since the week ending January 17. Elsewhere throughout the United States, production remained stationary. This fact should be kept in mind at this time when it is indicated Wortham is beginning to settle to a fairly steady output each week. During the week ending January 17, the production for the entire United States averaged 1,998,045 barrels daily. This output dropped to 1,914,428 barrels daily for the week ending February 7, or just prior to last week when a slight increase was shown, or a difference of 83,617 from the peak so far this year. For the week ending January 17, Wortham was credited with an average daily production of 148,000 barrels. Early this week Wortham was producing 64,000 barrels a day or 84,000 barrels less than its daily average for its peak week. So, it can be seen easily the decline at Wortham was practically the same as the decrease shown in the total for all fields of the country.

Practically every field in the country is showing greater activity than for a long time past, due to higher prices posted for crude oil in every area. Weather conditions are improving throughout the country and it will not be long until roads are in better shape for the transportation of drilling material and equipment. The weather and bad roads have held down much activity and prevented the starting of considerable drilling which has been planned. Consequently, it is reasonable to expect production in the older fields will be maintained at least and probably will increase. There is more wildcatting being done now than at this season of the year for a long time and more is planned when weather and roads permit operations. This means new production for it is almost certain some of the areas to be tested will be found productive.

Summarizing the entire crude oil situation at this time it may be said production probably will not show any further decreases of importance, at least for some time, and possibly will register slight gains. But, until a new field with a substantial production is found, there is little chance of crude oil prices going lower than at present and more than a possibility they will advance still higher.

Another general advance in crude oil prices, except for California, announced last week, emphasized the fact the present situation is entirely healthy from the standpoint of the crude oil producer. The increases in prices were announced in the Mid-Continent, Eastern fields, Central West, Gulf Coast and Rocky Mounain area, in fact, everywhere except in California where a substantial raise was announced the week before. Crude oil is in good demand and production is below consumption.

There are two outstanding features at present which will have a most important bearing upon the future situation. They are the wildcatting operations going on in this country and the increased activity being displayed by companies holding concessions in foreign fields. Venezuela is bound to be a factor of importance within the very near future while other South American countries will get a greater play this year than for a long time. Mexico, also, cannot be placed in the has-been class by any means, the bringing in of a 7,000-barrel well in a new district there, as announced in this publication last week, indicating there is considerable territory in that country which may be oil productive.

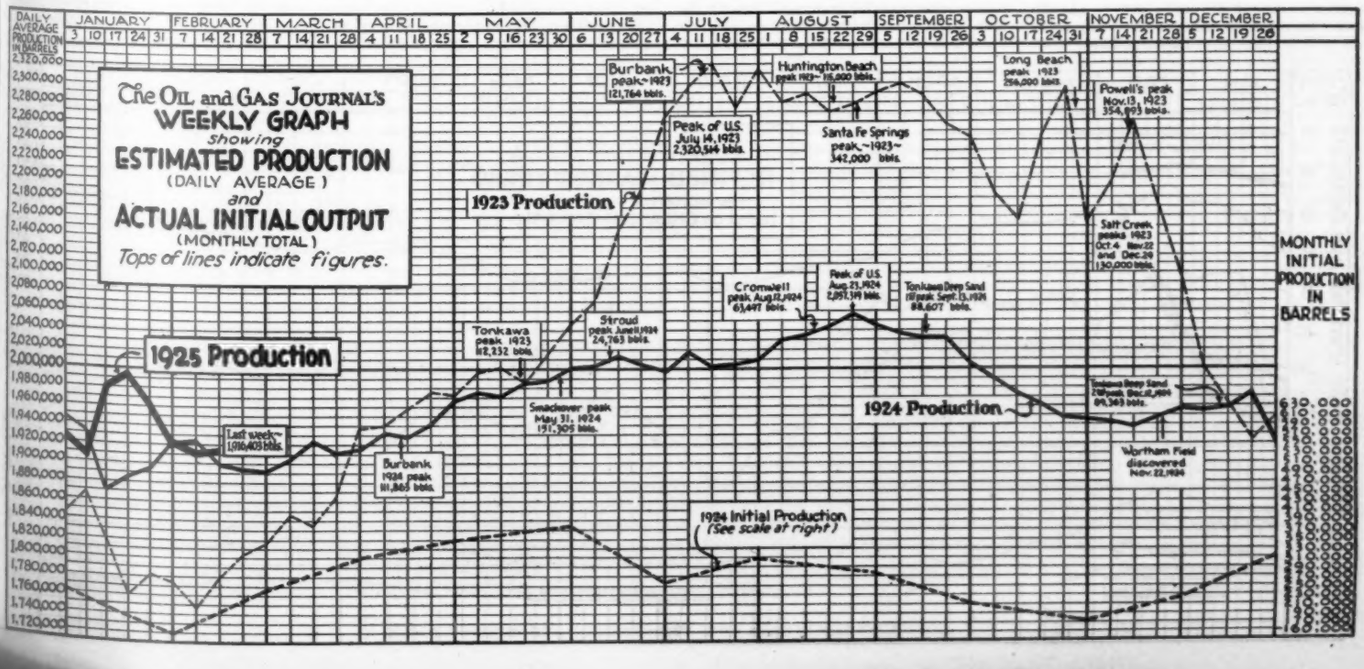
The Bazette area in East Central Texas will bear close watching during the next few weeks. Wells already are being drilled there and it will require three or four weeks, probably to complete them. If oil in commercial quantities is found there, it is more than likely the area will be developed quickly, much as Powell and Wortham were. There are a number of other areas which are commanding a more prominent position in the production columns such as the Rainbow Bend Pool in Kansas, Jim Hogg County in Southwest Texas and the Ventura Avenue Field in California. Production of the latter field has about doubled during the past two weeks due to the bringing in of big wells.

PRODUCTION IN THE UNITED STATES

Estimated daily average crude oil production in the United States for the week ended February 14, and a comparison with previous week follows:

	Feb. 14	Feb. 7
Oklahoma—Northern Fields:		
Tonkawa	93,785	94,890
Burbank	57,670	57,220
Other Osage Fields	36,335	36,100
Cushing and Shamrock	23,045	22,990
Bristow and Eastern Bristow	35,865	36,450
Cromwell	38,820	36,160
Papoose	39,115	36,880
Northern Miscellaneous	95,840	95,215
Southern Fields	62,890	63,220
Total Oklahoma	483,365	479,125
North Louisiana	48,803	49,693
Arkansas—		
El Dorado and Calion	9,670	9,840
Smackover Light	32,445	32,505
Smackover Heavy	58,835	60,310
Stephens and Nevada	3,305	3,235
Total Arkansas	104,255	105,890
North Central Texas	134,425	128,470
Powell	56,200	57,600
Mexia, Currie, Richland, etc.	38,090	37,700
Wortham	68,450	78,300
Kansas	84,125	82,275
Total Mid-Continent Area	1,017,713	1,019,053
Gulf Coast	71,140	71,990
Southwest Texas	46,930	44,205
Eastern	98,625	96,950
Rocky Mountain Area	88,995	88,230
California—		
Santa Fe Springs	47,000	47,000
Long Beach	118,000	118,000
Huntington Beach	41,000	41,000
Torrance	40,000	41,000
Dominguez	53,000	55,000
Remainder of State	294,000	292,000
Total California	593,000	594,000
Total United States	1,916,403	1,914,428

→ **Increase, 1,975 Barrels** ←


The Oil and Gas Journal's
WEEKLY GRAPH
showing
ESTIMATED PRODUCTION
(DAILY AVERAGE)
and
ACTUAL INITIAL OUTPUT
(MONTHLY TOTAL)
Tops of lines indicate figures.
DAILY AVERAGE PRODUCTION IN BARRELS
MONTHLY INITIAL PRODUCTION IN BARRELS
1925 Production
1924 Production
1923 Production
1924 Initial Production (See scale at right)
Burbank peak-1923 121,764 bbls.
Peak of U.S. July 14, 1923 2,320,544 bbls.
Huntington Beach peak 1923-118,000 bbls.
Santa Fe Springs peak,-1923-142,000 bbls.
Long Beach peak 1923 256,000 bbls.
Powell's peak Nov. 13, 1923 354,093 bbls.
Salt Creek peaks 1923 Oct. 6 Nov. 22 and Dec. 26 130,000 bbls.
Tonkawa peak 1923 112,232 bbls.
Stroud peak June 1924 24,763 bbls.
Cromwell peak Aug. 22, 1924 63,497 bbls.
Peak of U.S. Aug. 23, 1924 2,057,319 bbls.
Tonkawa Deep Sand 1st peak Sept. 15, 1924 88,607 bbls.
Smackover peak May 31, 1924 191,309 bbls.
Last week-1,916,403 bbls.
Burbank 1924 peak 111,865 bbls.
Tonkawa Deep Sand 2d peak Dec. 12, 1924 84,363 bbls.
Wortham Field discovered Nov. 22, 1924

Refined Market Quiet in Oklahoma

Little Activity in Spot Market. Gasolines and Kerosenes Advanced Following Latest Change in Crude and Tank Wagon Schedules

By C. O. Willson

Additional refining and marketing news will be found in the section starting on Page 108

Contrasted with the somewhat hectic period of the previous month, the past week in the Oklahoma (Group 3) refined market has been quiet. This has been especially noticeable since the first of the week. Following the advance of crude and gasoline and kerosene prices on Thursday and Friday of last week, price trends were unsettled for a day or two but after the refiners had advanced their gasoline prices approximately 1 cent and kerosene ½ cent, the market quickly settled down to the handling of routine business.

There was probably less spot business placed during the past week than any seven-day period in several months. The dearth of orders applied to practically all products. In the case of gasoline and kerosene the higher prices were generally held accountable for the failure of buyers to hasten into the market, although kerosene had not been active previous to the advances. As to fuel oil and distillates the dullness was but a continuance of that situation reflected in the fact that while costs of crude have mounted approximately 75 per cent during the past five weeks in the Mid-Continent area, prices on these two classes of refined products are practically the same.

Price Changes Summarized

Summarized, the principal price changes for the week are as follows:

In the open market an advance in 58-60 U. S. Motor gasoline from 12-12¼ to 13¼-13½ cents and a corresponding increase in practically all grades of refinery gasoline, natural gasoline and blends.

All grades of kerosene advanced ½ cent.

Marginal contracts for the sale of gasoline based on the Standard Oil Co. of Indiana tank wagon schedules advanced 2 cents due to the general 2-cent increase in tank wagon prices announced on Friday. These contracts are now netting the refiners 10½ to 11 cents in most instances.

Fuel oil contracts based on crude prices advanced 18 cents due to the 30 cents increase in the posted crude price on which they are based. These contracts vary in terms but a majority of the contracts with the railroads are now netting the refiner from $1.35 to $1.45 a barrel. The contract price of one large buyer is now $1.45 with Oklahoma refiners. Due to this advance contract prices for the first time since last summer are now higher than the spot market which is having difficulty holding its own at a price range of $1.30 to $1.35 for grades under 26 degrees in gravity.

Although there were scattering advances reported in a few grades of lubricants following the announcement of higher posted prices the general market condition is unchanged except cylinder stocks which are 1 to 2 cents higher. Gas oil is more active than fuel oil and distillate and a firm price position is being maintained.

Little Spot Activity

With little activity in the spot business the trade generally is as usual concerned with "what is going to happen next." Part of the slowness in the gasoline market can be accounted for by the fact that both buyers and sellers are uncertain as to the future and are waiting for some developments which will give them an idea of market trends for the immediate future. Many refiners are well taken care of for February due to orders placed a week to a month ago and are not alarmed by the fact that there has been little new business.

Several of these refiners are making deliveries on gasoline which they sold last month at prices from 2 to 5 cents a gallon under the present spot price. With these sales in mind they fear that orders for March delivery placed at this time would also be considerably under the spot market at the time of delivery and in a few instances at least the sellers have announced their intention not to sell any gasoline except for prompt shipment.

The buyers, on the other hand, are not so willing to speculate as they were a month ago, many believing gasoline prices have reached their peak regardless of further advances in the crude and tank wagon schedules. This attitude applies to many domestic buyers and it is known that at least one important export purchaser has taken the same position.

REFINED MARKET BAROMETER

Developments in refined markets during the past week were again somewhat mixed. In some sections further crude and tank wagon changes disturbed the refinery markets. The only change which applied to all areas except the West Coast was an advance in gasoline prices of ½ to 1½ cents. Fuel oils were generally sluggish with slightly lower prices in all sections except the coast areas where the demand is strong enough to maintain firm prices. Gas oil prices are generally firm. Kerosene prices were advanced in the Middle West, Mid-Continent and Pennsylvania with no changes in other areas. The demand for distillates is slowing up with the approach of spring which ends the season of maximum consumption. Natural gasolines are higher in all sections except the West Coast. Lubricants advanced 1 cent on most grades and scattered advances were reported in other areas. Wax prices firm.

Mid-Continent—Gasolines including natural gasolines and blends advanced ½ to 1 cent in all areas. The demand for fuel oils and distillates is slow and prices lower than last week. Kerosene prices are ¼ to ¾ cents higher in all areas. Cylinder stocks higher in price. No changes in other products.

Atlantic Seaboard—Gasoline strong and further advances expected. Gas oil and furnace oil firm. Diesel oil steady. Bunker oil prices unchanged with strong demand. Slow up in demand for cylinder oils. Demand for paraffin wax light. Export movement declines.

California—Market generally steady following price advances of previous week.

Gulf Coast—Neutral prices advance 1 cent following latest crude price change. Gas and fuel oil unchanged.

Pennsylvania—All grades of gasoline advanced 1 cent with fair movement from refineries. Kerosene prices higher. No important changes in lubricating oils. Wax firm.

In regard to the crude market observers of the crude situation in the Mid-Continent and the oil industry generally are of opinion there will be further advances in the immediate future. It is possible that within a few days it will be apparent that the 15 to 35-cent advances of last week will change the crude situation so that additional increases will not materialize for a month or two at least. There is no indication of this shift in fundamental conditions at this time.

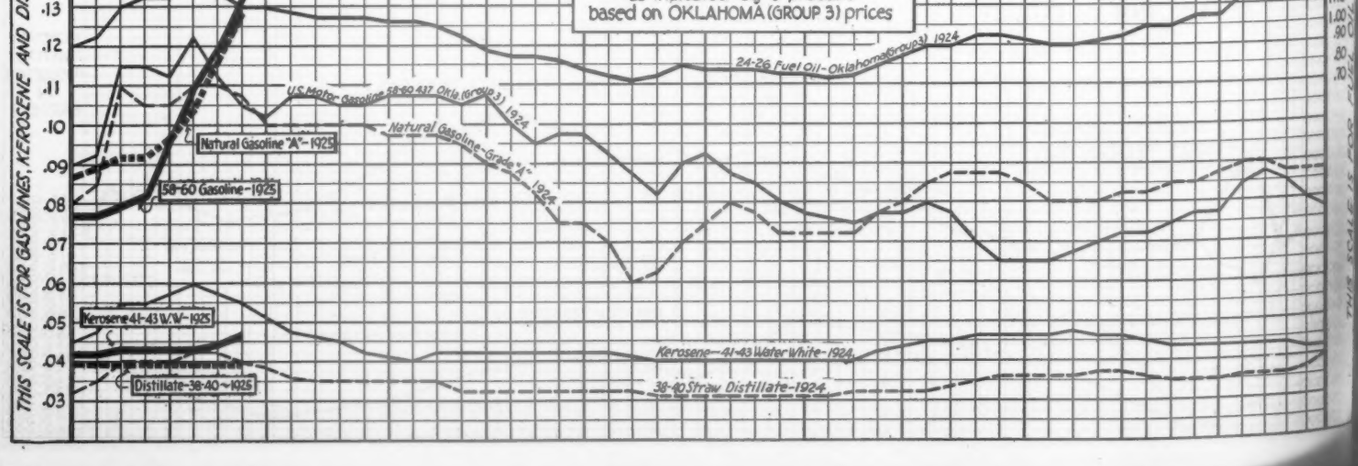
Those who keep in almost daily touch with conditions in the field state the latest crude advances have still not materially changed the tight market situation which has prevailed for weeks. A few producers have made new pipe line connections but this has generally been with independent refiners who had offered substantial premiums over the posted price.

It is authoritatively stated that the major buyers have not been able to obtain new crude connections through their higher posted prices and in at least two cases in Oklahoma daily purchases are less than in January. Practically all of these large companies are drawing on storage and are actively soliciting additional crude from both small and large producers.

This situation, which applies to other sections of the Mid-Continent as well as Oklahoma, leads to the conclusion that the larger buyers will advance their prices until the desired crude is obtained. Every crude price advance has weakened the position of the refiner who buys his crude supplies as he has not been able to offset entirely his increased costs with a compensating increase in revenue. In a few casts, at least, the margin of profit to the refiner has been reduced to a minimum. Further indication of this situation is seen in the fact that one organization which was about to start up its refinery has indefinitely postponed its action due to the crude advances.

Probably the only effect of another crude change would be to advance gasoline prices both in the spot market and on contracts as the higher posted crude would probably be accompanied by an advance in tank

(Continued on Page 110)


CENTS PER GAL.
JAN. FEB. MARCH APRIL MAY JUNE JULY AUG. SEPT OCT NOV. DEC.
DOLLARS PER BBL.
THIS SCALE IS FOR GASOLINES, KEROSENE AND DISTILLATE
THE OIL and GAS JOURNAL'S
WEEKLY CHART showing
REFINED MARKET TREND
~as indicated by 5 products~
based on OKLAHOMA (GROUP 3) prices
24-26 Fuel Oil-1925
U.S. Motor Gasoline 58-60 437 Okla (Group 3) 1924
Natural Gasoline "A"-1925
Natural Gasoline-Grade "A"-1924
58-60 Gasoline-1925
Kerosene 41-43 W.W.-1925
Distillate-38-40-1925
24-26 Fuel Oil-Oklahoma (Group 3) 1924
Kerosene-41-43 Water White-1924
38-40 Straw Distillate-1924
THIS SCALE IS FOR FUEL

Efficiency in the Production of Oil

Recent Questionnaire Leads to Some Observations on Tests That Have Been Made With Varying Results

By James McIntyre

The most recent questionnaire of the Federal Oil Conservation Board deals with efficiency in production. It is directed to petroleum engineers, geologists and oil executives in every oil producing division in the country. It is made up of questions which the industry has been trying to solve for years.

Most of the questionnaire is on the utilization of gas from new oil wells to increase the production of oil wells from which the gas pressure is gone, but along with it is the request for ideas and suggestions as to other methods of oil recovery after the natural flowing and the later pumping methods of recovery have taken from the sand all the oil it will yield by those systems of recovery.

The high standing of the men to whom the questionnaire is addressed, is an assurance that the information developed, theoretical and practical, will represent the best thought in the industry. In the list of those who received the questionnaire are men prominently connected with the Gulf Oil Corp., Skelly Oil Co., Empire Companies, Humphreys-Boyd Oil Co., Gardner Petroleum Co., Gilliland Oil Co., Pacific Oil Co., Marland Oil Co., Simms Oil Co., Sinclair Consolidated Oil Corp., Derby Oil Co., Phillips Gas & Oil Co., Midwest Refining Co., Standard Exploration Co., White Oil Corp., Humble Oil & Refining Co., Ute Petroleum Co., Western Pipe Line Co., Hope Natural Gas Co., Honolulu Consolidated Oil Co., Manufacturers Light & Heat Co., the Philadelphia Co., Amerada Petroleum Corp. and Shell Co.; a number of universities and colleges and some of the best known and most efficient independent engineers and geologists in the trade. As the Conservation Board makes it plain that it seeks the consensus of opinion of the industry on the matter at hand it is reasonable to assume that the men who are questioned will counsel with others as well informed as themselves before making their replies. Each of the questions requires study and investigation. None of them can be answered offhand and none can be answered with positive conviction born of general application and results.

Recovery of Dead Oil

The first question has to do with the recovery of dead oil depleted of its gas, lying dormant in the sand and dependent on drainage by gravity into a well. The oil industry has studied this problem for years. It has found an answer in some fields where "flooding" the sands, the application of air pressure against the sands, the application of vacuum and the utilization of surplus gas from new wells or from casinghead gasoline plants have been more or less successful locally, but the industry has found, too, that what is successful in one field fails in another. The flooding system used in the fields of northern Pennsylvania and southwestern New York is not used in any other part of the great Appalachian Field, which altogether contains 181,702 oil wells yielding on an average a shade more than half a barrel of oil a day. It has undoubtedly increased production in the Bradford and Allegany Fields, in some cases several hundred per cent, and if it were generally applicable would be used in other Appalachian fields but there are sand conditions in the Bradford and Allegany fields that do not prevail in other fields in that region, added to which is the help of nature in supplying an abundance of water at no additional cost to the Allegany-Bradford producer.

Pulling and Pushing

Experiments with vacuum in Bartlesville sand wells in Oklahoma has resulted in a material increase in production in some cases and the use of air pressure in the sands to replace the exhausted gas pressure has been found successful in certain other localities in the same State, but the last named system is yet in the experimental stage. In another part of the State in an effort to make use of gas from a casinghead gasoline plant, which would otherwise have been wasted, it was turned into old oil wells under pressure and in good volume and increased the production of a lease 50 per cent, but when it was necessary to otherwise utilize the gas and it was no longer used in restoring the pressure, the production of the lease immediately fell off below what it had been before the gas was applied.

In the above experiment there was no appreciable increase in the amount of gas the oil wells yielded and no increase in the gasoline content of the gas recovered. The engineers in charge of the experiment cannot say what became of the gas forced back into the sands. They only know that it was lost. An experiment in the Ventura Field in California of a somewhat similar nature, excepting that gas from a high pressure gas well was used, resulted in the complete loss of the gas. Mother Earth swallowed the gas and there was no increase in oil production. In this case the experiment proved 100 per cent failure. Here were two experiments of the same general character, but in Oklahoma the test was made in the Bartlesville sand, a thick, unbroken body, while in California it was made in wells producing from sand lenses.

The Conservation Board asks if the free gas in the higher parts of the producing sand may be used to replace the gas produced with the oil (presumably in older wells) thereby rejuvenating, as it were, the dead oil left behind in the otherwise depleted parts of the producing sand. The experiment already referred to as having been made in the Ventura Field is one reply to this question. The only result was the complete loss of the gas. The same application made in Oklahoma or Kansas, or in any field where the sands do not lie in lenses might meet with success in increasing production in the older wells in the same neighborhood, but it would delay the completion of the oil well from which the gas was coming. In an offset well this might mean a greater loss to the producer than he could make up in production gained by the use of the gas. In addition to this there is a question of what the result would be in the old wells after the gas pressure was gone. It would be reasonable to fear that the old wells, no longer under pressure, would perform no differently than those Bartlesville sand wells already mentioned. Also it is a question as to whether or not the gas would be recovered.

The Conservation Board's question as to whether casinghead gas after the gasoline is removed from it, can be made to produce oil finds one answer in the experiment tried in Oklahoma, already referred to.

Use of Air More Economical?

Engineers of high standing say there is nothing that can be done in restoring production by the use of natural gas that cannot be done with less expense by the use of air. Natural gas is a fugitive product and the supply of it is limited. The compressed air installation has an infinite supply from which to draw. There is never any lack of air. The economical use of high pressure gas is possible in its immediate neighborhood. If it has to be conveyed in pipe lines for any distance it becomes more expensive than an air installation and this is an answer to the board's question: "Can gas be profitably transported from one oil field to another in this country for the purpose of bringing oil to wells, and if so, where and under what circumstances?"

Percentage of Recovery

The board asks: "What is your estimate of recovery under methods commonly used?" The answer to this question, in the majority of cases, we venture to say, will be 20 per cent. The industry has recovered nearly 8,000,000,000 bbls. of crude oil in this country since 1859, leaving more than 30,000,000,000 bbls. of crude in the sands on properties already developed, to say nothing of the oil buried in the sands not yet discovered. The enormous unrecovered known production is Uncle Sam's principal reserve. It is needless to say that the owners earnestly desire to recover as much of it as they profitably can. It is sufficient oil to supply the country's needs for many years at the present rate of consumption, if made

(Continued on Page 116)

IOWA INDEPENDENT OIL DEALERS HEAR PRESIDENT F. A. PIELSTICKER

DES MOINES, Iowa.—Feb. 13.—Striking a keynote of working toward more cooperation between jobbers, station men and refiners, and advocating further injection of purely business methods into their businesses, some 250 members of the Iowa Independent Oil Dealers' Association this afternoon closed a two-day convention at Hotel Fort Des Moines.

There was a general resentment current throughout the convention toward the proposed Iowa gasoline tax and the attitude of State officials who have denounced the recent boosting of gasoline prices as profiteering and evidence of controlled prices. The attorney general has declared that when the same price is charged for a product over the entire State, and when the price is boosted simultaneously over the entire State, it is prima facie evidence of price control.

Probably the address that interested the convention most was on "Marginal Contracts" by F. A. Pielsticker of El Dorado, Kans., president of the Western Petroleum Refiners Association and vice president of the Skelly Oil Co. Mr. Pielsticker outlined reasons for and against marginal contracts, then declared himself flatly against the system.

Mr. Pielsticker on Contracts

Mr. Pielsticker said first that the only marginal contract he would consider was where the price was fixed on a general and not on a local price.

"The first benefit is to the jobbers and retailers, for to them it guarantees a gross profit. The jobber can govern his sales prices and thus be assured a uniform profit, when he has but one source of buying. Likewise this gives the refiner a chance to know how he stands and he can give jobbers more extended credits. And right here let it be said that under such a system some may prosper at the expense of others, although there is a mutuality of interest there that must be protected.

"Working under a marginal contract the jobber has a chance to look ahead, to gauge his expenses for a coming year, to know how much he can afford for equipment and other matters. He can cooperate with his banker in loans and go further with his credit to retailers.

"It gives the refiner an assured outlet and cuts his sales expenses, letting him give better prices that result in economy right down to the consuming public.

"But on the other hand there is a probable loss in gross profits, as the fixed margin is usually smaller than the temporary one. The biggest handicap is that it does not permit the jobber to meet conditions over which he has no control. The marginal contract would have to be

(Continued on Page 116)

Annual convention Iowa Independent Oil Men's Association at Des Moines.

Congress Starts New Gasoline Quiz

District of Columbia Committee Begins National Inquiry and Senate Directs Federal Trade Commission to Begin Anew

By Charles E. Kern

WASHINGTON, D. C., Feb. 16.—The spirit of investigation, with the oil industry in the leading role, is developing in Congress as the close of the session approaches. The price of gasoline was increased in Washington a few days ago along with the general price movement on the Atlantic coast and elsewhere, whereupon Representative Zihlman, of Maryland, a member of the District of Columbia committee, initiated an investigation to discover why gasoline increased in price.

The District of Columbia Committees of the Senate and House of Representatives perform the function of a town council in legislative matters affecting the District of Columbia. Representative Zihlman is chairman of the subcommittee, the appointment of which he brought about and he proposes to find out why the price of gasoline has been increased 5 cents in the District.

Text of Resolution

The Zihlman resolution directs the committee to obtain the following information:

1. The stocks of crude oil and gasoline at refineries or elsewhere in the United States as of January 1, 1925, and the owners and holders thereof.

2. The price of crude oil and gasoline at said refineries and in open market on January 1, 1925.

3. The relation the recent increase in crude oil bears to the increase in the price of gasoline, and the percentage thereof.

4. Whether or not the recent increase in the price of crude oil and gasoline has been general and uniform by all companies throughout the United States, or whether there has been marked local differences in the price charged in the various localities; whether there exists a monopoly or combination in restraint of trade or commerce, or violation of law among the producing, refining and distributing companies.

The special committee is to report to the next Congress in December. It authorizes the committee to sobpoena witness and to hold its sessions at any places it deems necessary.

This subcommittee called before it Paul Himmelfarb, manager of the Penn Oil Co., who said, in effect that his price was increased because the price of the Standard Oil of New Jersey went up. J. T. Walker, local manager of the Standard, called, said the increase, undoubtedly, was due to a heavy drain on the crude oil supply, but he said the prices were fixed in New York and he simply carried out orders. Representative Hammar, of North Carolina, and Representative Gasque, of South Carolina, in questioning Mr. Himmelfarb caused that gentleman to say the prices of the Penn Oil Co., of which he is local manager, run along with the prices of the Standard.

Tax Increases Price

It was developed in this interesting hearing that the new gasoline tax law produced $472,734 from June 1 to December 31, 1924, and it was estimated the total tax per car for that period was $6.62 or 94 cents a month. Here was a most interesting part of the price increase, definitely accounting for 2 cents of the price of gasoline and showing that Congress has provided a law which will take out of the oil industry about $1,000,000 every year and allow that money to be used to pay expenses in part of the District of Columbia. The statement in respect to revenue was made by William P. Richards, District tax assessor.

No sooner had Representative Zihlman called these witnesses than Senator Trammell wrote out a resolution which he introduced in the Senate, directing the Federal Trade Commission to investigate not only the price of gasoline but to ascertain whether the producers and wholesalers of gasoline maintain a monopoly in restraint of trade or commerce or in violation of the law. The Senate always passes this sort of resolutions and the Federal Trade Commission is always as ready to jump on the job as the fire department is ready to respond to an alarm. So it looks as if the commission will once more start its field men traveling over the United States to find out why the price of gasoline has gone up.

Trade Commission's Activities

The Federal Trade Commission is really a continuous investigating body in respect to the oil industry. If the oil industry should disappear from the face of the earth the Federal Trade Commission would have a severe blow dealt to its activities.

It is wisely announced that should the Federal Trade Commission discover the existence of a monopoly in the oil industry it will be authorized under the resolution introduced by Senator Trammell "to proceed forthwith by appropriate action for the punishment of such monopoly or trust and the dissolution thereof."

The Trammel resolution declares in its preamble that in some States the increase in gasoline has been as much as 6 cents a gallon and charges the general price boost is apparently arbitrary and unwarranted. It seems that Senator Trammell, when he heard the local manager of the Penn Oil Co. state he had followed the price of the Standard, came to the conclusion that the increase in price was simply the result of arbitrary action and not the consequence of trade conditions.

Representative Zihlman has had some of the experts of the United States Bureau of Mines come before his subcommittee and furnish statistics in respect to oil production, the storage of oil and consumption.

These Bureau of Mines officials told the committee the price of gasoline bore a natural relation to the price of crude oil and was justified by conditions in the industry. The committee then decided it wanted to hear from the Federal Trade Commission rather than the Bureau of Mines and interest now is fixed upon the views that will be forthcoming from the commission.

F. B. Tough, chief technologist, and G. R. Hopkins, represented the Bureau of Mines at the hearing. Mr. Tough pointed out the relationship between cost of crude oil and gasoline and quoted statistics to show that that relationship is always maintained. He emphasized that the increase in cost of crude oil in the last few years has been apparently justified.

It costs more, Mr. Tough said, to produce oil on account of the necessity for deeper wells, higher drilling costs, the price of additional pipe and pumping, all of which enter into the equation. He also explained to the committee that the percentage of gasoline from oil by better refining methods has been increased from 10 to 15 per cent a few years ago to about 30 per cent today. The present gas is not a volatile, and does not start so easily but goes more miles per gallon, he said.

Mr. Tough told the committee that between $8,000,000,000 and $9,000,000,000 is invested by oil companies and that the price is based on the production of crude oil. He introduced charts showing that the price in Washington had increased from 16 cents in October to 21 cents on February 3.

In reply to a question from Representative O. E. Keller of Minnesota as to whether the prices of gasoline and crude oil in the District of Columbia today are justified, Mr. Tough answered as an individual, saying: "I do not have any information which leads me to think the price unfair. In fact, gasoline is selling below its true worth. If we have an increase in production of crude oil, then we may expect a decrease in the price of gasoline. Otherwise there will be no decrease in the price of gasoline.

When Representative Zihlman called attention to figures of the Department of the Interior which showed the largest rate of production in gasoline in December, at which time the increase in price to consumers started, Mr. Tough explained that formerly stocks started to increase in October and November, but that this year they could not begin to stock up until December.

It is now so near the end of the present session of Congress that nothing more can be accomplished beyond the taking of testimony, but the foundation is being laid for a continuation of this inquiry by the regular session of the next Congress that will meet next December.

President Interested?

The Washington bureau of the New York Journal of Commerce says: "High prices for gasoline are looked upon with disfavor by President Coolidge, it was indicated at the White House. Spokesmen said one of the fundamental reasons for the creation of the Federal Oil Conservation Board was the hope that methods of production might be developed which would do away with rising prices." The President is reported to have "felt at the time the board was appointed that it was apparent there was overproduction of crude oil and that this overproduction would lead to waste, which would in turn be followed by a shortage of oil and a great increase in prices. In order to prevent such an occurrence, spokesmen reported, Mr. Coolidge believed it was possible to devise an orderly means of production and distribution which would conserve the national resources, and through a regular flow of supply to the markets obviate price increases or a shortage."

MISSOURI ATTORNEY GENERAL FILES REJOINDER TO STANDARD'S ANSWER

JEFFERSON, CITY, Mo., Feb. 16.—Charges that the Standard Oil Co. entered into a contract with competitors "as an adroit scheme and device for the deliberate purpose of evading the anti-trust laws of Missouri" and to enable the Standard to set up a territorial zone of trade for its exclusive enjoyment, are contained in Attorney General Otto's reply to the company's answer to the ouster proceedings instituted against it by ex-Attorney General Jess W. Barrett field in the Supreme Court today.

Otto charged that "the scheme puts it within the power of the Standard to keep millions of gallons of gasoline out of the State thereby enabling it to arbitrarily maintain an excessive price for gasoline."

In his statement the attorney general reviewed the history of the litigation against the Standard from the time of the ouster proceedings instituted in March, 1909, by Herbert S. Hadley, then attorney general. In this instance the Supreme Court issued an order permitting the company to operate in Missouri on condition that it did not again violate the anti-trust statute or the laws of Missouri. Since that time, Otto contended, the company has been operating under a virtual parole.

Barrett filed a motion to revoke the order suspending the ouster in September last year and asked the court to enforce its original order on the ground that evidence brought forth in a series of hearings which he conducted before a special commissioner for the Supreme Court proved that the Standard has since its parole by the court violated the anti-trust laws by making license contracts with various competing companies whereby it authorized companies to produce gasoline by the use of a patented process which was owned and controlled by the Standard.

The Standard contended that being the owner of these patents, it had the right to authorize their use to such companies and in such territories as it choose without violating the anti-trust law.

The license contracts contained a provision restricting the territory in which the process might be used provided that if that clause of the contract were violated the violation would be cause for revocation of the contract. Missouri is in the restricted territory, according to Otto and Barrett, and is recognized as such in the contracts with reference to it as a portion of the trade territory of the Standard Oil Co. of Indiana.

The attorney general contends that gasoline is a product of nature, therefore not patentable, and that its production is not subject to control through a patented process, even though the quantity produced by the patented process could not otherwise be produced. This is the principal legal question to be determined by the Supreme Court in passing upon the case.

Otto announced that he was instituting an investigation of the recent increase in gasoline prices.

"About the time Barrett filed his motion in September," Otto said, "gasoline was on a falling market by reason of the large overproduction of crude oil which was due to the opening of new pools in the oil region.

"It is not thought that the conditions with respect to the supply of crude oil are different now from what they were in September last, and, if not, then there is no sound economic reason for 3-cent raises in gasoline prices. I have an investigation in progress now to determine the conditions claimed by the oil interests, and expect to do everything that can be done under the law to preserve the lowest possible price on gasoline to the people of Missouri. Gasoline prices have been raised 4 cents and the production of crude oil is as great or greater than it was in the fall of 1924 when prices were much lower. At this time of the year when consumption is less and production shown to be greater, the recent raises in price certainly cannot be justified."

The Producer's Part in Conservation

Despite Talk of Overproduction Only One Year Since 1918 When United States Produced More Than It Consumed

By Charles E. Bowles

From the standpoint of the producer of crude oil, the President's letter constituting the Federal Oil Conservation Board contains three vital sentences:

(1) It is evident the present methods of capturing our oil deposits is wasteful to an alarming degree in that it becomes impossible to conserve oil in the ground under our present leasing and royalty practices if a neighboring owner or lessee desires to gain possession of his deposits.

(2) I am advised that our current oil supply is kept up only by drilling many thousands of new wells each year, and that the failure to bring in producing wells for a period of two years, would slow down the wheels of industry and bring about serious industrial depression.

(3) The production of our 300,000 wells is in excess of our immediate requirements.

Taking up these three sentences in their reverse order and assembling the production and consumption of crude oil within the borders of the United States, we find that since January, 1918, there has been but one year (1923) in which we produced more oil in the United States than we consumed in the United States.

From the standpoint of our being "self supporting" in the matter of crude oil supply, the following tabulation shows our exact position. United States Geological Survey figures are used for production, consumption, imports, exports and changes in stock for the years 1918 to 1924, inclusive. In using the survey's estimate of 714,000,000 barrels for total production for 1924 the consumption has been adjusted to balance out the stocks December 31, 1924.

Year—	Production	Consumption
1918	355,928,000	412,273,000
1919	378,367,000	420,462,000
1920	442,929,000	530,532,000
1921	472,183,000	526,032,000
1922	557,531,000	592,432,000
1923	732,407,000	714,316,000
1924	714,000,000	755,882,000
Totals	3,653,345,000	3,951,929,000

Overproduction Only in 1923

It is interesting to note that only in the year 1923 did we produce more oil in the United States than we consumed in the United States—and then only 18,000,000 barrels more, even though our production increased 175,000,000 barrels over 1922. On January 1, 1923, crude oil in storage amounted to 252,053,000 barrels and on December 31, 1923, to 334,774,000 barrels, an increase of 82,721,000 barrels. In other words, while we actually produced 175,000,000 barrels more oil in 1923 than in 1922, the net result from our imports, exports and "consumption" was to increase our stocks only 82,721,000 barrels.

On January 1, 1918, our pipe line and tank farm stocks were 116,221,000 barrels. December 31, 1924, these stocks had increased to 352,631,000 barrels—an increase of 236,410,000 barrels.

In this connection two vital facts must be kept clearly in mind. (1) Over this seven-year period our domestic production (3,653,345,000 barrels) fell short of our domestic consumption (3,951,929,000 barrels) by 298,584,000 barrels. (2) We imported 609,196,000 barrels of oil, almost all from Mexico.

The following tabulation shows the relation between exports and imports during the seven-year period under consideration:

Year—	Imports	Exports
1918	37,736,000	4,901,000
1919	52,822,000	6,019,000
1920	106,175,000	8,757,000
1921	125,364,000	8,940,000
1922	127,308,000	10,163,000
1923	82,015,000	17,385,000
1924	77,776,000	18,037,000
Total	609,196,000	74,202,000

Net Result Shown

The net result of our part in the world oil situation during the last seven years can be crystallized in the following summary from the preceding figures:

Difference between domestic production and consumption	Barrels
	298,584,000
Exports	74,202,000
Increase in stock	236,410,000
Total	609,196,000

In other words, we actually consumed 298,584,000 barrels more oil in the United States than we produced in the United States—and at the same time we exported 74,202,000 barrels and increased our storage by 236,410,000 barrels.

And the importation of 609,196,000 barrels of oil made all of this possible.

Without imports, during these seven years, there would have been no "cheap gasoline"—and no thought of "overproduction."

It is contended by some that, in the aggregate, "oil is oil" and the moment any foreign oil comes into the United States it immediately loses its identity in that it becomes a part of our total supply of oil.

Imports Swell Stocks

Viewing the situation from this standpoint we find that over this seven-year period our "supply" of oil has been 236,410,000 barrels greater than our "demand." This is shown in the following tabulation in which supply is domestic production plus imports and demand is domestic consumption plus exports.

Year—	Supply	Demand	Stock
1918	393,664,000	417,174,000	*23,510,000
1919	431,189,000	426,481,000	4,708,000
1920	549,104,000	539,289,000	9,815,000
1921	597,547,000	534,972,000	62,575,000
1922	684,839,000	602,595,000	82,244,000
1923	814,422,000	731,701,000	82,721,000
1924	791,776,000	773,919,000	17,857,000
Totals	4,262,541,000	4,026,131,000	236,410,000

*Withdrawn from stock.

Approached from this angle, our supply of crude oil has exceeded our demand every year except 1918, when we drew 23,510,000 barrels from stock. In the seven-year period supply exceeded demand by 236,410,000 barrels—and as on January 1, 1918, our stock of crude oil was 116,221,000 barrels it naturally follows that on December 31, 1924, it was 352,631,000 barrels.

However, in order to emphasize the net effect of Mexican oil on our general situation, the imports and the increases in stock are set up in tabular form as follows:

Year—	Imports	Added to Stock
1918	37,736,000	*23,510,000
1919	52,822,000	4,708,000
1920	106,175,000	9,815,000
1921	125,364,000	62,575,000
1922	127,308,000	82,244,000
1923	82,015,000	82,721,000
1924	77,776,000	17,857,000
Total	609,196,000	236,410,000

*Withdrawn from stock.

From the foregoing it is obvious that even though in 1918 we imported 37,736,000 barrels of oil from Mexico, we were forced to dray 23,510,000 barrels from stock. And that in 1919, while we imported 52,822,000 barrels from Mexico, we added only 4,708,000 barrels to stock after taking care of our domestic and export requirements.

Mexico's Big Years

In Mexico's three big years (1920-21-22) we imported 358,847,000 barrels—and yet, after taking care of our domestic and export requirements, we added only 154,634,000 barrels to stock. All of this means that if we had not imported these 358,847,000 barrels from Mexico, and had depended entirely upon our domestic production, we would have used up the last barrel of oil in storage and still have been 100,000,000 barrels short.

As the net result of bringing eight big fields to their peak of production in 1923 we were able to produce 18,091,000 barrels more oil than we consumed. During the same year we imported 82,015,000 barrels and exported 17,385,000 barrels. Therefore the change in stocks was as follows:

Excess of production over consumption	18,091,000
Imports	82,015,000
Total additions	100,106,000
Exports	17,385,000
Added to stock	82,721,000

It is extremely interesting to note that in the face of an increase in production in 1923 of 175,000,000 barrels, our increase in stocks (82,721,000 barrels) was almost exactly the same as our imports (82,015,000 barrels.) In other words if, in 1923, we had imported no oil, our stocks on December 31 would have been only 706,000 barrels more than on January 1. And this in face of an increase in production of 175,000,000 barrels during the year.

During the past two years we have produced over 700,000,000 barrels of oil a year—and it is highly improbable that we will ever see another increase of 175,000,000 barrels in our annual production.

Peak of Production Passed?

And if, in 1923, we could absorb the "jolt" of an increase in domestic production of 175,000,000 barrels—and imports of 82,000,000 barrels—and at the same time increase our storage only 82,000,000 barrels, the conclusion seems almost inescapable that we are today about at—or probably have passed—the point where we can reasonably expect to produce, within our own borders, more than a slowly diminishing proportion of our total requirements of crude oil. In fact, aside from the "spurt" of 1923, it seems that we passed that point prior to 1918.

Referring to the second quotation from the President's letter let's see about what would happen if no new wells were drilled in 1925-1926 and at the same time we imported a total of 260,000,000 barrels, exported a total of 42,000,000 barrels and consumed a total of 1,650,000,000 barrels.

In order to get an idea of what our domestic production would be, with no new wells drilled in 1925 and 1926, let's figure that the wells (about 300,000) that produced 714,000,000 barrels in 1924 will produce 20 per cent less in 1925 and 15 per cent less in 1926. On this basis our production would be as follows:

Production in 1924	714,000,000
Less 20 per cent decline in 1925	142,800,000
Production in 1925	571,200,000
Less 15 per cent decline in 1926	85,680,000
Production in 1926	485,520,000

Assembling our total supply of crude oil available during this two-year period we have

Production in 1925	571,200,000
Production in 1926	485,520,000
Imports from Mexico	160,000,000
Imports from South America	100,000,000
Oil in storage, Jan. 1, 1925	352,631,000
Total available supply	1,669,351,000

(Continued on Page 82)

The OIL and GAS JOURNAL

PRODUCING REFINING MARKETING

Published Weekly by
THE PETROLEUM PUBLISHING COMPANY
114-116 West Second Street
TULSA, OKLA.

Established as an International Publication in 1910 by Patrick C. Boyle

President - - - - - - - - - - - - Frank T. Lauinger
Vice President and General Manager - - Robert W. Egan
Treasurer - - - - - - - - - - - - - H. J. Bryan
Secretary - - - - - - - - - - - - - W. T. Bryan
Editor - - - - - - - - - - - - - James McIntyre
Associate Editor - - - - - - - - - W. T. Anderson
News Editor - - - - - - - - - - Andrew M. Rowley
Refinery Editor - - - - - - - - - - C. O. Willson
Advertising Manager - - - - - - - - Clarence Morris
Circulation Manager - - - - - - - - J. P. Mulkern

DISTRICT ADVERTISING OFFICES
30 Church Street — 1328 Peoples Gas Bldg.
NEW YORK — CHICAGO, ILL.
PITTSBURGH, PA., 1003 Jones-Law Bldg.

TERMS OF SUBSCRIPTION
(By Mail, Postage Prepaid)

Single copies - - - - - - -	$ .15	One year (in United States) - -	$6.00
Three months - - - - - - -	$2.00	One year (in Canada) - - - -	$7.00
Six Months - - - - - - - -	$3.00	One year (foreign countries) - -	$7.00

ADVERTISING RATES ON APPLICATION
Telephones: 6291—6292—6293
Remittances by Checks, Drafts, Express or Postal Money Orders should be made payable to
The Petroleum Publishing Company
Cable address, "Oilgasnal"

MEMBER AUDIT BUREAU OF CIRCULATIONS

WHAT FUEL OIL IS WORTH

Now that the period of overproduction of crude appears to have passed and gasoline prices are following crude upward the oil industry might find it profitable to devote some attention to considering means for obtaining what President Coolidge terms the essential value of its gas and fuel oils.

While these products, the bulk output of the refining industry, had advanced somewhat during the winter they have not responded to the trend in crude and gasoline as might have been expected, and, indeed, are threatened with lower prices.

In looking around for the cause of this check attention is directed to the very aggressive propaganda that has been conducted by the coal interests in the effort to scare fuel consumers from turning to oil.

The growth of the demand for gas and fuel oils in the past few years has alarmed the coal industry greatly. Oil burning vessels and motorships are challenging the supremacy of coal at sea. The railroad use of oil has been steadily increasing. In New England, Chicago and the Northwest oil heating has become so popular as to offer an attractive market for distillates.

Coal men facing declining prices have attributed it largely to the competition of oil and have been energetically combating it with sales publicity and propaganda, and are seizing the advancing cost of oil as further argument to deter consumers from changing their fuel.

Oil men, on their part, have been hesitant, foreseeing that oil could not expect to compete in cheapness with coal and that to attempt it would mean simply the cheapening of oil.

Out of this situation has developed the failure of gas and fuel oils to follow the upward curve of crude and gasoline.

The question now before the oil industry is to find means of getting proportionate returns for its burning oils. If these products do not bring what they ought it means throwing a larger share of the burden on gasoline.

In the interests both of the refiners and of the gasoline consuming public it is essential that gas and fuel oils obtain their representative price.

So long as gas and fuel oils are produced and have to be sold the industry should see that they bring what they are worth and are not disposed of for less in a vain competition with cheap coal.

Coal is today at a low mark. The very intensity of the campaign being waged by coal men against the expansion of oil burning testifies to their extremity.

On the other hand, while stocks of gas and fuel oils are at their peak, consumption has been increasing at the rate of 12.14 per cent.

More than half the stocks are held in California where the market is firm because of the absence of coal resources and general dependence upon oil. In California the 327,000,000 gallons in stock January 1, 1923, had grown to 849,000,000 at the opening of 1925.

East of California, on the contrary, the total stocks have decreased from something over 1,077,000,000 gallons on January 1, 1923, to 821,000,000 gallons January 1, 1925.

In other words consumption exceeded supply east of California during the past two years by more than 255,000,000 gallons.

Statistically, there is every basis for getting full return for gas and fuel oils.

The first step would be to abandon any assertion of competing with coal in cost. Oil, as a fuel, has practical advantages that make it worth more than coal. These are manifest in its use at sea and in its consumption of railroads located more advantageously for oil than coal.

For heating purposes its convenience, cleanliness, greater heating efficiency and susceptibility to regulation according to temperature, with saving in labor and fuel, put oil on a plane by itself.

Such complaints as the coal propaganda sets forth can and should be met by cooperation within the oil industry and between the industry and the manufacturers of oil using equipment.

The quality and delivery of supply call for consultation with makers and consumers in regard to equipment and storage. The oil business must be as anxious to satisfy its customers as the coal business appears to be.

If the coal campaign has been able to check gas and fuel oil prices it has been because the oil industry has been silent and because we have been tacitly encouraging the notion of oil competing in cheapness.

There is a market for burning oils where their superiority as fuel entitles them to their own price. With the passing of overproduction the oil industry should be in position to get that return, thereby balancing its own operations and getting the essential value of all its products.

DRESSER
COUPLINGS DOMINATE

Dresser Style 38 Couplings are made for all sizes of pipe, from ½" up, and are used on pipe lines for every purpose

Dresser Steel Pipe Coupling Style 38, such as was furnished for the 40" gas line shown on the right

Flexible, strong and durable, Dresser coupled pipe lines assure maximum service. There are thousands of miles now in use for the transportation of gas, oil, air and water.

S. R. DRESSER MFG. CO.
BRADFORD, PA., U. S. A.

Need for Oil Awakens the Wildcatter

Oklahoma and Kansas Will Witness a Revival of Test Work This Year. Bulk of "Play" Somewhat Localized

By George D. O'Neill

The increased prices for crude and the general belief of the industry that the needs of the country cannot be supplied by the crude oil now in sight is stimulating interest in wildcatting in localities in Oklahoma and Kansas as yet untested. A considerable number of wells are actively drilling and others are shut down, some for lack of funds. It is not going to require much salesmanship on the part of the owners to raise sufficient cash to push these operations to completion, and to set out a new crop of rigs in strictly wildcat areas.

Pottawatomie County, in Oklahoma, until lately looked upon by oil men with little favor, seems to be attracting a large number of operators, and many leases have changed hands there during the past few weeks. While geologists do not consider it a very good bet, due to unfavorable sand conditions and the great depth of the more productive horizons, a large number of wildcat operators seem willing to take a chance, and some of these are going out to see what they can find. Their argument in favor of Pottawatomie County is based chiefly upon the fact that some very productive pools have been found in two adjacent counties, Seminole on the east, and Lincoln on the north. While it must be admitted that the northeast corner of that county presents interesting possibilities, it must be remembered that the more favorable formations lie at great depths, the top of the Mississippian being 10,000 feet below sea level in one part.

Noble and Western Pawnee

Noble County, and the western part of Pawnee County are generally conceded to be most promising for new production. Recent tests carried to the Wilcox sand have opened up such productive fields that many look for more such pools before the end of the year. While no other Wilcox sand pool has been nearly so productive as Tonkawa, Stroud, Watchorn and other fields producing from the same horizon will give encouragement to the drilling of a large number of tests to this sand. Lincoln and Payne Counties, for the same reason, will also come in for a very active wildcat play, especially the former county, where the Stroud Field is located which was producing 25,000 bbls. from the Wilcox sand last summer.

Okfuskee, Hughes and Seminole Counties, where the Cromwell, Wewoka and Papoose Fields are located, will, of course, continue to receive a large amount of attention. It is said that there are a large number of structures in these counties that have never been tested adequately and the productive sands found in the above mentioned fields will be sought in other parts of that area for further production. Leases taken out in this district five years ago will expire this year, and the necessity of drilling on the part of the lessees to hold their title will, with the encouragement received by higher crude prices and the proximity of Papoose and other large fields in that district, lead to a large amount of drilling activity in that part of the State.

Other Promising Areas

The north flank of the Wichita Mountains, where the rocks of the same horizon which produce most of the oil in the northeastern quarter of the State rise to the surface and crop out in the foothills, is also thought by many to be well worth a try, and geologists have been mapping structures in Grady and Caddo Counties, and a number of locations have been made.

Carter and Stephens Counties will receive further attention from the wildcatters, though not to the extent that the more northerly parts of the State will get.

In Roger Mills, Custer, Woodward and other counties in the western part of the State, the more favorable rocks lie at greater depths. While some production has been obtained from rocks in the lower parts of the Permian, petrologic conditions are not often favorable to the formation and occurrence of petroleum in the strata of that age. While it is generally conceded that the western part of Oklahoma may yet become a factor in oil production, it must be remembered that exploratory work in that part of the State is very costly. In Roger Mills County, the Permian beds total more than 3,000 feet in thickness, and it is not until a considerably greater depth than this is reached that the productive horizons of the eastern part of the State are reached. Whether the Wilcox is present is not known; and even in the event it were known to exist there it would be at so great a depth that to reach it would be an impossibility.

Active in Kansas

In Kansas, wildcatting seems to be about as active at the present time as it is in Oklahoma. The wonderful productiveness of the new pools in Cowley County, as well as the showing made by the Russell Pool in Russell County have served to revive interest in the State to a considerable degree, as well as several pools in Greenwood County.

While wildcats are drilling, or have started and shut down, in nearly every county of the State, two areas only seem of any real promise,—Russell County and Cowley County, with parts of Sumner, Sedgwick and Butler Counties. Within the past week several locations have been made in the latter area, especially in the eastern part of Sumner County. The very productive sands of Cowley County are generally thought to extend to the west and northwest, and while they dip to lower depths as one goes westward, the chances of finding a number of good pools farther west seem very good.

The list of active and temporarily shut down wildcats in Oklahoma and Kansas shows how widely scattered over the two States the wildcatting activity is at present, and shows the localities receiving most attention.

Present Status of Wildcats

Grant County

8-27- 8w Mid-West Refining Co. and Gulf Refining Co.'s No. 1 Moon, NW cor. Shut down for orders at 2,490 feet.

30-27- 4w Thraves and others' No. 1 Fuss, SW cor. NW NW. Shut down for orders. Total depth, 1,250 feet.

2-21- 3w Marland Oil Co.'s No. 1 Webb, C NE NE. Shut down at 1,465 feet.

20-26- 4w Embry & Leright's No. 1 Edwards, SE cor. NW. Shut down at 1,080 feet.

Woodward County

4-23-17w Anderson and others' No. 1 Nordyke, SW cor. Rig up.

34-20-20w Beard and others' No. 1, NE cor. NW NE. Show of oil and gas at 1,097 feet. Shut down at 2,610 feet.

Garfield County

9-23- 5w Zinc and Barnes' No. 1 Cope, NW cor. SW. Shut down at 1,865 feet. because of litigation.

36-23- 5w Martin & Flemming and others' No. 1 Schraeder, NE cor. SW. Building rig.

11-21- 4w Boeppe and others' No. 1 Wirtz, NE cor. SW. Rigging up.

12-21- 4w Boeppe and others' No. 1 Schweer, SE cor. SW SW NE. Shut down at 850 feet.

7-21- 3w Chaffee and others' No. 1 Wirtz, NW cor. SE. Rigged up and shut down.

7-26- 6w Jens Marie Oil Co.'s No. 1 Sheary, SE cor. NW SE. Shut down at 1,930 feet.

19-20- 5w Summers Oil & Gas Co.'s No. 1 Ray, SW cor. NW. Drilling at 3,175.

2-21- 7w Furlow and others No 1 Montgomery, NE cor. SW. Show of gas at 2,355-70 feet; show of oil at 3,316 feet. Shut down at 3,440 feet.

Muskogee County

24-12-19e File & Clapp's No. 1, NW cor. SE SW. Shut down at 800 feet.

Major County

36-22-14w The Texas Producers Co.'s No. 1 Lindville, SW cor. Spudded in and shut down.

9-23- 9w Brandt's No. 1, center SW quarter, 500,000 feet of gas at 1,160 feet. Shut down for fuel at 3,630.

36-21-11w Frantz & Slick's No. 1 Williams, C NW. Shut down for pipe at 855 feet.

Osage County

8-24- 8 Lake and others' No. 1, NW cor. Drilling at 350 feet.

Kay County

29-29- 4w Phillips Petroleum Co.'s No. 1, SE cor. NE SE NW. Drilling at 900 feet.

25-29- 2w Hickman and Bernhardt Drilling Co.'s No. 1, SW cor. NW SE. Shut down at 900 feet.

13-27- 1 Producers & Refiners Corp.'s No. 1 Koefer, SE cor. NE NW SE. Shut down for orders with hole full of water at 2,502 feet.

27-27- 3 Alcorn Oil Co.'s No. 1 Lewis, SE cor. SW NE NE. Show of oil at 3,065-67, and at 3,425-30 feet. Drilling at 3,720 feet.

8-26- 2w Day Oil Co.'s No. 1 Manata, SW cor. NW. Show of oil at 4,585 feet. Drilling at 4,585 with hole full of water.

27-25- 2w W. E. Brown Oil Co.'s No. 1 Simmons, NE cor. SE. Show of oil at 2,106-10 feet. Shut down at 3,381 feet for lack of funds.

36-25- 2w Emery & Leright's No. 1 Davis, NE cor. SE SE. Shut down at 1,090 feet.

30-25- 1w Thornton & Baily's No. 1 Pool, NE cor. SW. 6,000,000 feet of gas at 1,035 feet; show of oil at 2,116 feet. Shut down for orders at 2,728 feet.

28-26- 2w O'Kansas Oil Co.'s No. 1 Carr, SE cor. NE NW NE. Show of gas at 2,612-20 feet. Fishing at 3,204 feet.

Woods County

19-24-14w McCray Oil Co.'s No. 1 Whitney, NE cor. NW SE. Shut down at 1,880 feet.

Alfalfa County

23-24-11w Armstrong and others' No. 1 Twin Bull, NW cor. SE NW. Drilling at 2,900 feet.

Kingfisher County

17-19- 5 Jens Marie Oil Co.'s No. 1 Hank, NW cor. NE NE SE. Spudded in and shut down.

25-17- 5w Brysey & Hines' No. 1 Smith, SE cor. SW. Show of gas at 400 feet. Fishing at 2,312 feet.

17-15- 6w Chi Oil Co.'s No. 1 Carney, C SW SW SW. Shut down for fuel at 1,400 feet.

Logan County

32-19- 3w Burford & Brimm's No. 1 Newman, NE cor. NE. Drilling at 2,560 feet on iron.

5-19- 2w Gilliland Oil Co.'s No. 1 Myer, center NW quarter. Show of gas at 2,864 feet; drilling at 3,400 feet.

26-18- 4w Lyons & Jones' No. 1 Wells, NE cor. SW SE. Location.

28-18- 4w Franklin Oil Co.'s No. 1 Moore, NW cor. SW NE SE. Drilling below 2,200 feet.

23-18- 3w Haley & Smith's No. 1 Guler, SE cor. SW. Rigging up.

35-17- 4w The Casing Royalty Co's No. 1 Lindsley, SW cor. NE SE. Rig up.

28-16- 1w Pluto Oil & Gas Co.'s No. 1 Driggs, NE cor. SW. Shut down at 1,111 feet.

28-15- 1w Lambert and others' No. 1 Cromought, NW cor. SW. Rig up.

23-15- 1 Magnolia Petroleum Co.'s No. 1 Pritchard, NW cor. Drilling at 3,050 feet.

Noble County

25-23- 1w Jankowsky and others' No. 1 Burnsides, SW cor. Rigging up tools.

27-22- 1e Wentz Oil Corp.'s No. 1 Wentz & Fee, SW cor. NW NE. Rigging up.

4-21- 2w Spencer and others' No. 1 Friend, NE cor. NW NE. Cleaning out at 1,140 feet.

29-21- 1 Belt Petroleum Co.'s No. 1 Thiele, NW cor. SE SE SE. Spudded in and shut down to clean out.

32-20- 1 Nelson & Hauden's No. 1 Thompson, NW cor. SE. Fishing at 1,935 feet.

22-24- 2w Wilkins & Gore's No. 1 Curley, SW cor. NE. Shut down at 1,200 feet.

15-21- 2w Bu-Vi-Bar Oil Co.'s No. 1 Sams, C SW SW. Shut down at 1,500 feet.

Ellis County

2-21-24w Gates Oil & Gas Co.'s No. 1 White, SE cor. SW SW. Shut down at 1,970 feet.

Pawnee County

8-23- 5 J. L. Donahoe and others' No. 1 Leper, C SE SE SE. Location made.

25-22- 6e Victor Oil & Gas Co.'s No. 1 Bell, NE cor. Shut down at 2,300 feet.

Payne County

2-20- 2e Colorado Oil & Gas Co.'s No. 1 Cobb, NW cor. SE. Shut down at 240 feet.

16-20- 2eWalte Phillips Co.'s No. 1 Hinch

(Continued on Page 106)

ENGINEERS IN ANNUAL CONVENTION HEAR DOHERTY, POGUE AND UREN

By L. M. Fanning

NEW YORK, Feb. 18.—Petroleum engineers from all parts of the country participated in and witnessed one of the liveliest debates on conservation of oil that has taken place in meetings not behind closed doors since the appointment of the Federal Oil Conservation Board, the discussion being the high light of the meeting of the petroleum division of the American Institute of Mining and Metllurgical Engineers, held Tuesday and Wednesday in New York in connection with the institute's one hundred and thirty-first meeting.

After listening to papers comprising the symposium on petroleum and gas developments during 1924 at the Tuesday sessions, the engineers heard on Wednesday morning a carefully prepared paper by Henry L. Doherty, which had the title "Suggestions for Conservation of Petroleum by Control of Production," and in which Mr. Doherty outlined in more detail his unit plan of development. This paper opened up a discussion of the specific points made by Mr. Doherty and in addition a general discussion of the subject. Another paper treating on conservation was that of Joseph E. Pogue, bearing on the relation of price to available oil.

Mr. Doherty's Address

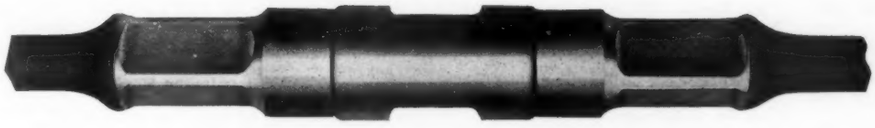
Mr. Doherty repeated assertions that the search for oil has become a freuzied game, that dissipation of gas under present methods of competitive drilling must and can be avoided and that what we need and must have is huge ground supplies of oil which can be drawn upon overnight in event of war. He said we must change the policy that has resulted in the American industry producing so cheaply and so easily that competition by foreign oil bas been for the most part out of the question. What he has been trying to get the leaders of the oil industry to advocate, but without success, he said, is changes in our laws relating to oil so we will be under the same law as other industries.

"No matter what other checks or restrictions other people may feel must be placed upon the production of oil," he said, "it is my belief that we must provide for the unit operation of pools. Instead of paying the land owner his royalties according to the amount of oil captured on his land, we must pay all of them according to the amount of oil which underlaid their land as the oil and gas existed as an undisturbed pool. This, in the main, is all there is to the so-called property plan, given the right to explore our pools before beginning production on a frenzied scale, the dawn of a new era will be born in which the riddles and puzzles of present day problems can be solved and we can know all we need to know of our pools to enable us to secure maximum production at the minimum cost."

Mr. Doherty said that at the proper time he intends to lay his plan before the Federal Conservation Board and urge its adoption but also in the event that no

(Continued on Page 117)

Double Pin Joint



Sheffield Sucker Rods

With these advantages:

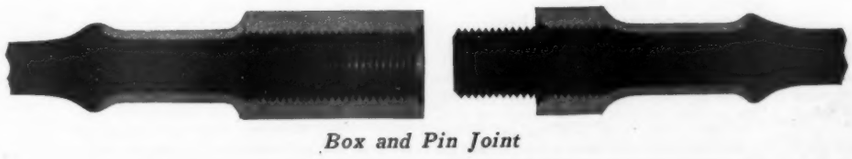
1. A sucker rod manufactured by a *maker* of steel.
2. A sucker rod produced from a special analysis steel.
3. A sucker rod produced with the simplest forging operation.
4. A sucker rod with every joint a positive joint, and as strong or stronger than the rod itself.
5. A sucker rod with a machined joint and true alignment.
6. A sucker rod that has eliminated undue pin breakage. No Sheffield Sucker Rods have ever broken at the pin.
7. A sucker rod that retains the full strength and endurance qualities of the special analysis steel from which it is made.
8. A sucker rod with a long standard, well-machined wrench fit that is easily handled with standard tools.
9. A sucker rod into which has been built all of the desired qualities of an ideal Sucker Rod.
10. A sucker rod completely manufactured under one organization, from raw materials charged into open hearth furnaces to finished product, by a plant at the very door of the great oil fields.

The Kansas City Bolt & Nut Company

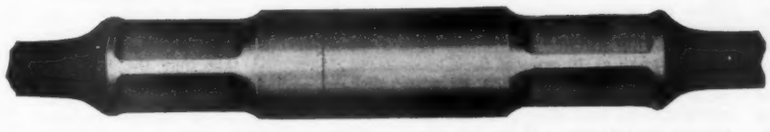
SHEFFIELD STEEL MILLS

Sheffield Station,
Kansas City, Mo.

Tulsa, Office,
805 Mayo Building



Box and Pin Joint



Late News From the Fields

OKLAHOMA

Fuhrman and Shaffer's No. 1 Samuel, SE cor NW NW, Section 22-10-9, Okfuskee County, drilled to 3,400 feet, where it was making 150 bbls. of oil with 40,000,000 feet of gas. At 3,396 feet water appeared, which did not seem to increase with continued drilling, and its origin was not known, though it is generally thought to be coming from behind the pipe.

The Cosden Oil & Gas Co.'s No. 1, NE cor. Section 21-10-9, Okfuskee County, was making 5,000,000 feet of gas from sand at 2,960-77 feet, where the well started spraying water.

The Shaffer Oil & Refining Co.'s No. 1 Little, SW cor. NW NW, Section 10-10-8, in the Cromwell Field, which is testing the deeper sands, had 2,000 feet of oil in the hole from sand encountered at 4,119 feet, after drilling to 4,131 feet.

The McMan Oil Co.'s No. 1 Warren, SW cor. SE, Section 27-25-1w, in the northwest end of the Tonkawa Field, Kay County, and the east offset to The Texas Co.'s No. 7 Davis, the farthest northwest well in the field, got the top of the lime at 4,089 feet, and oil at 4,122 feet. The first flow came at 4,128 feet, and at 4,162 feet the well was making 56 bbls. an hour.

The Blackwell Oil & Gas Co.'s No. 4-C Ruzek, NE cor. NW, Section 3-24-1w, had a hole full of oil from sand at 4,376-79 feet, and is an outside well on the southwest side of the field.

The Roxana Petroleum Corp's No. 8 Schroder, NW cor. SW, Section 18-22-3w, in Garfield County, an old well deepened, made 600 bbls. the first 24 hours from sand at 2,330-35 feet.

The Carter Oil Co.'s No. 2 Dunn, NW cor. SW NW, Section 3-10-8, in the Cromwell Field, topped sand at 3,369 feet, and made 1,260 bbls. the first 24 hours from 3,383-3,449 feet. The Mutual Oil Co.'s No. 1 Pierce, SW cor. SE, Section 33-11-8, was making 10 bbls. a day with 50,000,000 feet of gas after drilling through 75 feet of sand.

The Roxana Petroleum Corp.'s No. 1 Drake, NW cor. NW, Section 16-9-8 Hughes Copnty, had a hole full of oil from sand at 3,347-61 feet and was drilling in slate at 3,375 feet. It will be drilled to test the Cromwell sand.

The Dixie Oil Co.s No. 1 Irvine, SW cor. NW SE, Section 18-8-10, in Hughes County, was flowing 200 bbls. from sand topped at 3,340 feet, with 200 feet of open hole.

The Indian Territory Illuminating Oil Co. and the Barnsdall Oil Corp.'s No. 4 Williams, NW cor. SE SE, Section 54-10-9, in the Papoose Pool, Okfuskee County, was making 225 bbls. from sand at 3,296-3-307 feet. The same companies' No. 6, SE cor. NE SE, same section, had a show of oil at 3,309-11 feet, where it drilled into water. The Josey Oil Co. anud the Margay Oil Co.'s No. 1 Arbor NW cor SW NW, Section 1-9-9, was flowing at the rate of 350 bbls. daily from sand at 3,342-54 feet; the well is a quarter mile south of the Amerada Petroleum Corp's No. 1 Harjo, SW cor. Section 36-10-9, which is now making 900 bbls. of oil with considerable quantities of water.

GULF COAST

HOUSTON, Tex., Feb. 17.—In the Orange Pool, Anderson & Cameron's No. 2 State land on Cow Bayou, is flowing 800 bbls. at 3,150 feet, after being worked over.

Both the Sun Oil Co. and Humble Pipe Line companies are extending their lines from Hull to the South Liberty development in anticipation of several completions during the week. The oil has been classed as Grade A.

In the Aviator Pool in the Laredo district, the Rydal Oil Co.'s No. 5 is rated at 100 bbls. The company is drilling No. 6 on the Puigg ranch in the Edington Pool, where it has contracted to drill 12 wells.

The Lampasses-Bisbee Oil Co. will test No. 1 Bailey in Medina County at 940 feet. One shallow well of the Ina Oil Co. was treated to a shot of nitro glycerin and is now being cleaned. It was the first use of explosive in the Southwest.

In Wilson County, the Plateau Oil Co.'s test near Stockdale, is drilling at 1,910 feet and C. Garbett's No. 1 Houck, 9 miles southwest of Floresville, is around 810 feet and showing some oil.

In Karnes County, E. B. Reynolds' No. 1, between Kenedy and Runge, is at 2,400 feet. In Bexar County, the Good Oil Co.'s No. 2 Cantu, 15 miles east of San Antonio, is drilling at 1,500 feet. In San Patricio County, the Plateau Oil Co.'s No. 2 Freeman is at 2,000 feet.

In Atascosa County, the Rio Bravo Oil Co.'s No. 1 Suttle was abandoned at 2,900 feet. It was an old hole taken over from another interest. The Rio Bravo Co. has started No. 2 Suttle. De Lange, Eiser & Co.'s No. 2 Tom drilling at 4,045 feet.

NORTH CENTRAL TEXAS

FORT WORTH, Tex., Feb. 17.—The showing being made by the Williams & Laycock No. 2 of Whittington and others, a rank wildcat in Wheeler County, gives every promise of opening up an entirely new producing area in the Texas Panhandle. The well has now been drilled to a total depth of 2,220 feet and is flowing by heads at the rate of 500 bbls. a day. At around 2,200 feet the well hit some oil and for more than a week has been spraying at the rate of 50 to 100 bbls. of oil daily, until the heavier flow was encountered.

This well is probably 60 miles east of other production, which is on the 6666 ranch of the Burnett estate in Carson County. It is also producing from an entirely different horizon and is reported to be producing from a different formation. The Carson County production is coming from a level at slightly below 3,000 feet and the formation is classified as granite wash. The Whittington well is producing from a level about 800 feet higher and the formation is reported to be a sandy lime. The formation in the Whittington well is softening up as the drill goes deeper. The well is 8 miles north and 4 miles west of the town of Shamrock in Wheeler County.

There are four new producers in the Gambrell Pool of northern Young County, not yet completed. Two are by the Texhoma Oil & Refining Co. and two by Murchison and others, discoverers of the Gambrell Pool. The Texhoma Oil & Refining Co.'s No. 2 Gambrell is estimated good for 200 bbls. at 1,215 to 1,223 feet and No. 3 is swabbing about 300 bbls. at the same depth.

Murchison and others' No. 2 Gambrell is showing for 150 bbls. completed at 1,203 to 1,213 feet and their No. 8 is estimated good for 250 bbls. at 1,207 to 1,222 feet.

EAST CENTRAL TEXAS

MEXIA, Tex., Feb. 17.—The important test of Harrison and others west of Kosse was reported coring on Monday with nothing showing at 3,700 feet. The test had a showing at 3,660 feet in the Edwards lime but later bailed dry and was drilled deeper.

Penn and others' test No. 1 J. White, just north of the town of Currie in Navarro County, was drilling at 2,765 feet. Broken chalk was found at 2,630 feet.

Pipe line companies and some of the oil field supply companies have men in the Bazette area making preparations for a quick entry there if that region should show an oil field. The development of the fields along the Mexia fault has been so rapid that some of the companies decided that if they did not make tentative arrangements ahead they might be left at the post if the big rush is started.

The lease play in the Bazette area has extended across the Trinity River into Henderson County and from $50 to $100 an acre is being paid for leases somewhat removed from the center of the recently started new work near Bazette. The Humble Oil & Refining Co., the Gulf Production Co., and the Godley Oil Co. have all picked up some small parcels of leases east of the river.

The Humphreys-Boyd Oil Co.'s No. 1 J. P. Lindley, located about 1,300 feet south and a little east of the discovery well on the Boyd farm is in and is good for 350 bbls. a day. It is on the east side of the producing strip. It proves up considerable territory and makes about 300 acres look good. The sand was found at 3,008 to 3,015 feet.

The Humphreys-Boyd Oil Co.'s No. 11 Ferguson started at 40 bbls. an hour from sand at 2,980-98 feet.

The latest production roundup shows 240 Wortham wells producing 64,150 bbls. a day.

PREPARING TO TEST PROMISING MARATHON FOLD IN WEST TEXAS

By George R. Kelley

FORT WORTH, Tex., Feb. 14.—Two important events of recent happening have given considerable impetus to the wildcatting campaign that for months has been moving slowly in the Marathon Fold country of western Texas. These events are the recent advances in the price of crude oil and the bringing in of a huge gas well in Reagan County by the Big Lake Oil Co. There is also legislation pending in the Texas Legislature, which if passed, will further stimulate activity in Reagan, Crockett and other counties along the Marathon Fold.

The bringing in of the Big Lake Oil Co.'s No. 17 University as a gas well with an initial output of about 50,000,000 feet of gas daily is directing more attention to that territory than anything else.

If legislation now pending at Austin is enacted into law this western part of the State will be benefited especially where the leasing of lands involves land belonging to the University of Texas. The filing bill permits the transfer of a block as small as 40 acres of these leases whereas before not less than 80 acres could be transferred. The bill also requires that the land office at Austin must execute the transfers. If the bill passes converting the old permit form into the 88 form lease now recognized everywhere, leasing will be materially simplified.

The bringing in of the big gasser at Big Lake created the usual sensation that accompanies such oil field developments. The well is in the center of the northeast quarter of Section 1, Block 2 of the University lands. It is one-half mile from the nearest production and 1½ miles east of the discovery or Santa Rita well. The well is of importance because the gas flow was encountered at a depth of 2,440 feet, nearly 600 feet higher than regulation oil producing horizon in the Big Lake Field. It also will afford a plentiful supply of cheap fuel for drilling purposes in the field.

When the gasser first blew in it was estimated to be making 50,000,000 feet of gas. Later estimates on the output however are as high as 80,000,000 feet daily. The blowout came as a distinct surprise as no other gas in worth while quantities had ever been encountered in the field. The well is located near the Orient railroad and consequently extreme danger of fire developed when the blowout came. At this time the well has not been brought under control and precautionary measures are still being taken. The heavy gas is reported to have settled in the low places in the field and many drilling operations have been forced to shut down to prevent fire.

Responsible lease brokers here report there is a big demand for leases in the western part of the State. There are scores of inquiries coming in almost daily from eastern points, from Mid-Continent oil centers and from the Pacific Coast country. Inquiries are particularly numerous from Pittsburgh, Pa., Tulsa, Okla., points in Kansas and from California. The Big Lake country seems to be a favorite of the California operators, but there is also heavy buying from the big operating companies in Texas.

The Gulf Production Co. is now blocking acreage for a test in Reagan County, about 4 miles south of the present producing area. This company has taken up about 7,500 acres here and is expected to start drilling operations at an early date. To the southeast of the block taken by the Gulf and over the line in Crockett County the California Co. (Standard of California) is arranging a block of leases for a test. Acreage taken by this company is in Block 7 of the University of Texas lands in Crockett County.

Colonel Humphreys of the Boyd Oil Co. has just recently purchased a large tract of leases out of the ranch of the Sawyer Land and Cattle Co., and is expected to start operations at once. Acreage bought by Humphreys totals about 22 sections and is about 12 to 15 miles northeast of the present producing area in Reagan County.

Brandon & McCamey of Fort Worth, Tex., are starting a well on Section 11, Block 9 of the University lands in Reagan County. This location is 1 mile north of the No. 11 University of the Big Lake Co., so far the largest producer drilled in the Big Lake Field. One mile northeast of this location the Pilot Oil Co. (Levi Smith) has a derrick up and is to start operations at once. This location is in the southwest corner of Section 11, University lands of Reagan County.

The Cumberland Oil Co. of Muskogee, Okla., is making preparations for the drilling of three test wells in Crockett County. The Peer Oil Co. is also to made for one of these and the derrick is being erected. The location is on the Couch Ranch, Section 95 of Crockett County. The Peef Oil Co. is also to drill in this county. This company's location has also been made and materials are being moved in according to the latest reports from the field. The location of the Peer company test is in Section 50, Block 13 of the University of Texas lands.

Crockett County Locations

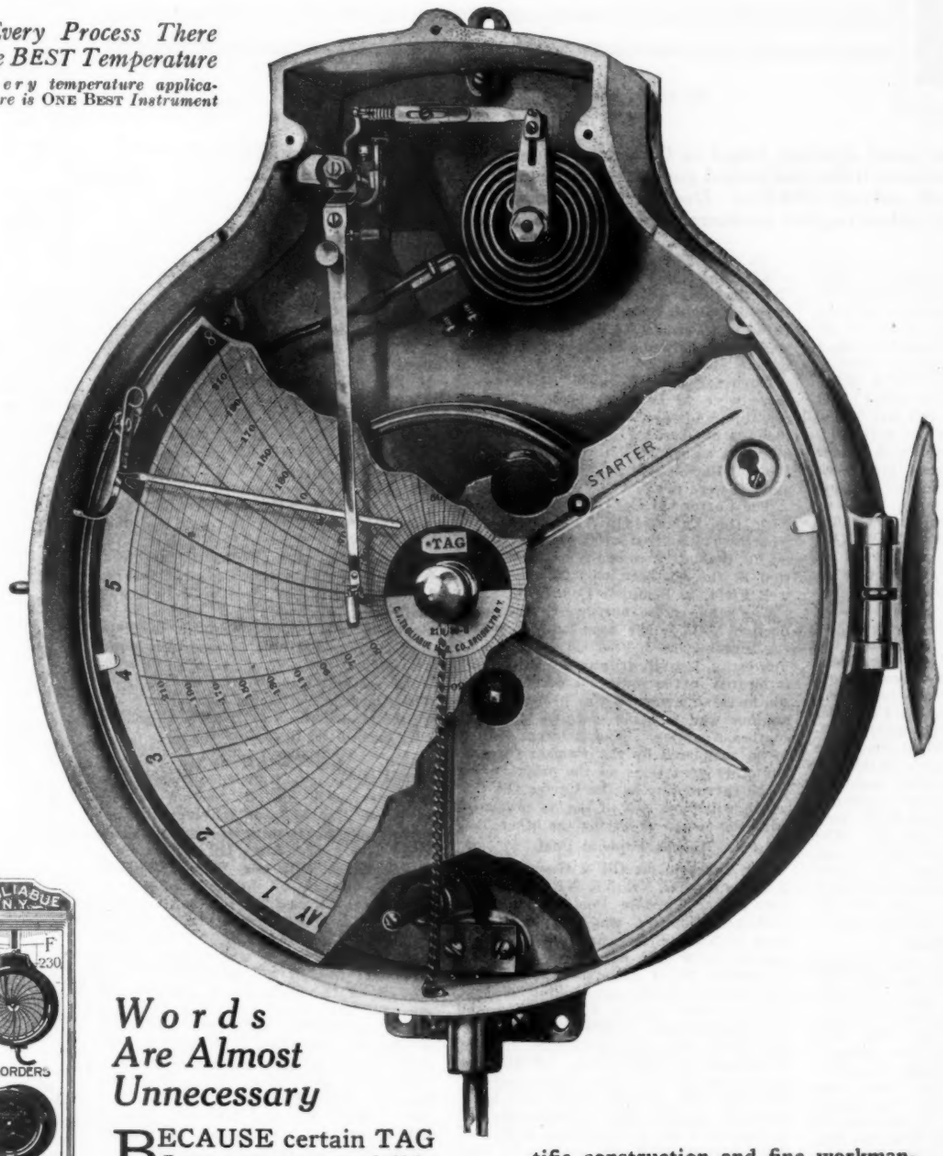
Two other Crockett County wildcat locations have also been made and the derricks are either under construction or materials are being moved to the locations. One of these is to be drilled by the Crockett Drilling Syndicate. It is the syndicate's No. 2 on the Shannon ranch, in Section 9, Block 10. This company drilled one test on the Shannon ranch last year, but it failed to develop production. The other wildcat is to be drilled by the Red Ball Oil Co., location having been made on Section 17, Block 29 of the University lands in Crockett County.

Reports are to the effect that some of the major operating concerns in Texas have been buying very heavily in that section of the State of late. Among the largest buyers are the Humble Oil & Refining Co., the Gulf Production Co., the Marland Oil Co. of Texas and the Sun Co. These four companies have recently purchased an aggregate of 24,000 acres in the northwestern portion of Crockett County. The leases were formerly owned by the Cartaret Oil Co. of New Jersey.

Other scattered districts are getting a good play by the wildcatters. One concern during the past week contracted for the purchase of more than 4,000 acres of scattered leases in Sterling, Upton, Reagan and Pecos counties. The Humphreys Boyd Oil Co. is reported to be making preparations for the drilling of a wildcat on a large block of acreage in northwestern Jack County. Definite location has not been announced but the acreage lies from 10 to 12 miles northwest of the town of Jacksboro.

For Every Process There Is One BEST Temperature

For every temperature application there is ONE BEST *Instrument*



Words Are Almost Unnecessary

BECAUSE certain TAG Instruments are *visibly* the best, our sales engineers report that when interviewing technical buyers, they need only let the instrument speak for itself. . . . Such success has attended the *TAG Mercury Recording Thermometer,* and is due, among other things, to its obviously correct design, scientific construction and fine workmanship. . . . So much for what can be seen. Now for the quality that you seek above all others: long *accuracy-life.* Endurance tests show that the TAG Recorder has the *longest* accuracy-life. . . . Cost, therefore, is the lowest per year of satisfactory service. . . . Write us today for the evidence.

C. J. TAGLIABUE MFG. CO.

18 TO 68 THIRTY-THIRD ST., BROOKLYN, N.Y.

Insist on Mercury Thermometers with the TAG-Hespe RED Reading Column

SINCE 1769

Oklahoma Field Operations

By C. D. Lockwood

Another good showing found in Okfuskee County wildcat. Burbank Field demonstrates it has not passed gusher stage when the Phillips Petroleum Co. gets well making 3,000 bbls. Deep test in Cromwell Field has good showing 700 feet below regular producing horizon. Production increases.

Fuhrman & Shaffer's wildcat in Okfuskee County, which was attracting attention a few weeks ago because of having found two sands with shows of oil and gas, has encountered another sand which makes things look more interesting than ever. The Shaffer Oil & Refining Co.'s deep test in the Cromwell Field had an interesting show 700 feet below the regular producing sand of that field, and is being watched carefully. An older field furnished some interest last week when a 3,000-bbl. well came in at Burbank after a 60-quart shot.

Fuhrman & Shaffer's Okfuskee County wildcat is No. 1 Samuels, C SE NW NW, Section 22-10-9. A sand was found at 3,380 feet which gassed at the rate of 25,000,000 feet per day, and a few feet further in began to spray oil. At 3,395 feet the tools were lost in the hole, and during the first 24 hours thereafter, the well sprayed 100 bbls. of oil. On Monday morning the tools had been recovered, and drilling operations continued.

The Shaffer Oil & Refining Co.'s No. 1 Little, C SW NW NE, Section 10-10-8, in the Cromwell Field, Seminole County, is a well which made 21,000,000 feet of gas in the Cromwell sand at 3,312-3,452 feet. Drilling was continued down to a sand topped at 4,091 feet, which gave a show of oil and gas. The drill went out of sand at 4,100 feet and into hard, white limestone. At 4,108 feet a sandy lime was encountered, which at 4,113 feet began to show oil; at 4,123 feet a good show of green oil was had.

Gusher at Burbank

In the Burbank Field, the Phillips Petroleum Co.'s No. 10 C SE NW NE, Section 18-27-6, topped sand at 2,900 feet, and got oil at 2,912 feet, making the first flow at 2,956 feet. The well was drilled to 2,972 feet, and given a 180-quart shot which brought a production of 130 bbls. the first hour, and 3,000 bbls. the first 24 hours. The Carter Oil Co. had a good well on the edge of the same field when No. 9, NW cor. NE, Section 13-27-5, made 300 bbls. the first 12 hours from sand at 2,980-3,036 feet after a 60-quart shot.

Donahoe and others' No. 2 Zoldoski, NE cor. NW SE, Section 22-23-4, one location east of the discovery well in the Masham Pool, Pawnee County, was making 5,000,000 feet of gas from sand at 642-57 feet.

Snowden & McSweeney's No. 1 King, SW cor. NW NW, Section 14-10-8, in the Cromwell Field, was making 200 bbls. at a total depth of 3,602 feet, the same amount as had been flowing from a depth of 3,575 feet. The Sinclair Oil & Gas Co.'s north extension well, No. 1 Pierce, C SE SE SE, Section 33-11-8, was drilled to 3,384 feet in sand topped at 3,341 feet, where it made an intial production of 3,000 bbls.

The Shaffer Oil & Refining Co. and others' No. 1, SE cor. NE NE, Section 6-14-9, Creek County, was making 36,000,000 feet of gas and showing oil at 1,235-68 feet.

Production of the Cromwell Field on February 14 was 38,745 bbls. from 269 wells; Papoose made 38,785 bbls. from 106 wells the same day. On February 13, Tonkawa produced 94,107 bbls. from 749 wells, of which 73,380 bbls. came from the 83 wells in the deep sand. On February 11, Burbank produced 57,182 bbls. from 1,669 wells; Watchorn or Otoe, in Pawnee County, 9,186 bbls. from 12 wells; South Weleetka, 2,051 bbls. from 20 wells; Wewoka, 11,108 bbls. from 107 wells, and Stroud, 2,832 bbls. from 69 wells.

During the week ended February 7, there were 49 locations made, 228 new rigs up, and 754 wells drilling. Completions numbered 71, of which 38 were oil wells with a combined initial production of 18,805 bbls.; 7 were gas wells, and 26 were dry.

The Carter Oil Co. recently completed, with the Pulaski Oil Co., a contract whereby it acquired a 50 per cent interest in the latter company's quarter section in the northern part of the Cromwell Field, in Seminole County.

The land is the northwest quarter of Section 33-11-8, the west half of which the Empire Gas & Fuel Co. owns a half interest. A well drilling at 2,400 feet is located in the southeast corner of the southwest quarter of the property, and another well is being spudded in in the southeast corner. The drilling well is to be completed by the Pulaski Oil Co., but other operations on the property are to be carried out by the Carter Oil Co., which will have half of the oil produced, with the option of buying the other half.

In the Papoose Pool

The Independent Oil & Gas Co.'s No. 2 Alexander, C NE NE NE, Section 2-9-9, in the Papoose Pool, Hughes and Okfuskee Counties, was completed with sand at 3,349-68 feet, first oil 3,358 feet, making 3,000 bbls. naturally. The same company's No. 4 Alexander, C SE NW NE, Section 2-9-9, was making 20 bbls. an hour from sand at 3,342-43 feet, and No. 5 Alexander, C NW SW NE, Section 2-9-9, was making 12 bbls. an hour from sand at 3,330-46 feet. T. B. Slick had a bad hole in No. 1 Alexander, C NE NE NW, Section 2-9-9, and abandoned it at 2,250 feet. The Cosden Oil & Gas Co.'s No. 4 Alexander, C SE SE NW, Section 3-9-9, was making 25 bbls. per hour from sand at 3,290-3,316 feet. Robinson and the Amerada Petroleum Corp.'s No. 5 Carter, C SW NE NW, Section 4-9-9, was swabbing 10 bbls. of oil and a considerable amount of water from sand at 3,341-47 feet. The Transcontinental Oil Co.'s No. 6 Tiger, C NE SE NE, Section 4-9-9, made 575 bbls. the first 24 hours from sand at 3,312-15 feet. The Mutual Oil Co.'s No. 1 Carter, C SE NW NW, Section 4-9-9, was completed with sands at 3,356-60 feet, and 3,367-68 feet, making 48 bbls. naturally. The Transcontinental Oil Co.'s No. 7 Tiger, C NW NE NE, Section 4-9-9, was completed with sand at 3,294-3,317 feet, making 275 bbls. naturally. The Prairie Oil & Gas Co.'s No. 2 Sawyer, C SE NW SE, Section 35-10-9, was making 40 bbls. an hour from sand at 3,332-43 feet.

The Prairie Oil & Gas Co.'s No. 1 B. Vincent, C SE NE SW, Section 34-10-9, was drilling at 1,600 feet. The Independent Oil & Gas Co.'s No. 6 Alexander, C NE SW NE, Section 2-9-9, was drilling at 500 feet. The Independent Oil & Gas Co. had a rig up for No. 3 Bruner, C NE NW NW, Section 1-9-9. The Josey Oil Co. and the Margay Oil Co. were building a rig for No. 2 Arber, C SW SW NW, Section 1-9-9. The Independent Oil & Gas Co. was building rigs for No. 7 S. Alexander, C SW SE NE, Section 2-9-9, and No. 7 I. Alexander, C SE SW NE, Section 2-9-9. T. B. Slick's No. 1-A Alexander, C NW NE NW, Section 2-9-9, was drilling at 700 feet. The Cosden Oil & Gas Co.'s No. 11 Alexander, C NE NW NW, Section 3-9-9, was drilling at 450 feet, and No. 12, C NW NE NW, Section 3-9-9, was drilling at 700 feet. T. B. Slick's No. 5 McKay, C NW NE SW, Section 3-9-9, was drilling at 300 feet. Robinson and the Amerada Petroleum Corp.'s No. 6 Carter, C NW NE NW, Section 4-9-9, was drilling at 590 feet. The same owners' No. 7 Carter, C NE NE NW, Section 4-9-9, was drilling at 200 feet. The Prairie Oil & Gas Co.'s No. 3 Vincent, C SE SW SW, Section 34-10-9, was drilling at 500 feet. T. B. Slick's No. 6 Sands, C SE SE SE, Section 35-10-9, was making 500 bbls. a day from sand at 3,058-65 feet, No. 8, C NW SE SE, same section, was drilling at 255 feet. The Amerada Petroleum Corp. had a rig on the ground for No. 1 Dacon, C SE SE SE, Section 36-10-9.

Creek County

The Atlantic Oil Producing Co.'s No. 2 Johnson, SW cor. SE, Section 14-17-8, in Creek County, was making 45 bbls. after an 80-quart shot in sand at 2,285-2,326 feet. The Lima Oil & Gas Co.'s No. 3 Green, NW cor. Section 24-17-8, had a show of oil in sand topped at 2,268 feet, and at 2,278 feet had 200 feet of oil in the hole. Mason and the Waite Phillips Co.'s No. 1 Fife, NE cor. NW SE, Section 24-17-8, was completed for 6,000,000 feet of gas at 2,717-29 feet. The Wolf Oil Co.'s No. 1 Larney, SE cor. SW NE, Section 33-16-8, was dry and abandoned at 3,925 feet. The Bu-Vi-Bar Oil Co.'s No. 2 Wright, C NW SW, Section 19-17-9, was completed with sand at 2,723-43 feet, making 6,500,000 feet of gas. The Waite Phillips Co.'s No. 1 Hill, NE cor. NW SE, Section 6-19-9, was god for 150 bbls. after a 30-quart shot in sand at 2,721-48 feet. Hartman & Williams' No. 1 NW cor. SW, Section 35-16-10, swabbed 30 bbls. from sand at 2,699-2,710 feet, and will drill to test the Wilcox. The Skelly Oil Co.'s No. 3 McKenna, C NE SW SW, Section 12-14-8, was shot with 100 quarts at 2,512-40 feet, and was good for 70 bbls. T. B. Slick's No. 1 Wisner, SW cor. NW NW, Section 10-15-9, was dry and abandoned at 2,100 feet. F. R. Billingslea and the Skelly Oil Co.'s No. 1 Fields, NE cor. SE SW, Section 30-15-9, was making 595 bbls. naturally from sand at 3,023-29 feet. C. G. Tibbens' No. 4, SE cor. NE SW, Section 30-15-9, was making 1,800 bbls. naturally from sand at 2,999-3,015 feet. The same owner's No. 2 Sneed, SW cor. NW SW SW, Section 7-14-9, was shot with 100 quarts in sand at 2,295-2,342 feet, and was good for 20 bbls. F. R. Billingslea's No. 1 Micco, CEL NE NE, Section 28-14-9, was making 190 bbls. naturally from sand at 3,101-24 feet. H. C. Wilson's No. 1 Strip, SE cor. NW, Section 4-14-10, was making 15 bbls. naturally from sand at 3,194-3,207 feet. The Pure Oil Co.'s No. 2 Stover, CWL SW NE SW, Section 7-14-7, was good for 20 bbls. after a 24-quart shot at 4,069-4,138 feet.

Other Operations

The Black Gold Oil Co. was spudding in No. 1 Harjo, SE cor. NW SE, Section 13-17-8. The Aztec Oil Co. was spudding in No. 1-A, SE cor. NW SE, Section 14-17-8. The Transcontinental Oil Co.'s No. 2 Freeman, SW cor. SE SW was drilling at 3,400 feet. The Waite Phillips Co.'s No. 4 Grayson, SW cor. NE NE, Section 23-17-8, had a 5-bbl. show at 2,672-97 feet, and was drilling at 2,825 feet. The Olean Petroleum Co. was rigging up No. 4 Wills, NW cor. NE NE, Section 6-16-8. The Phillips Petroleum Co.'s No. 1 Micco, NE cor. SW NW, Section 32-16-8, was drilling at 300 feet. R. T. Wright had a rig up for No. 1, NW cor. SW, Section 15-17-10. O. P. Stover was spudding in No. 1 Dickinson, NE cor. SW, Section 19-17-10. The Roland Oil Co. was rigging up No. 1 Fortney, CEL SE SW SE, Section 6-16-9. The Waite Phillips Co.'s No. 2, CEL NW SE, Section 6-16-9 was rigging up. The same company was building a rig for No. 3, CNL NW SE, Section 6-16-9. The Transcontinental Oil Co. was building a rig for No. 2 Brady, NE cor. NW SW, Section 34-16-9. C. G. Tibbins had a rig up for No. 2 Bearhead, NW cor. Section 13-14-8. F. R. Billingslea and the Skelly Oil Co. were spudding in No. 2 Fields, CNL NE NW, Section 30-15-9. C. G. Tibbins was spudding in No. 7, CSL NE SW, Section 30-15-9. The Shaffer Oil & Refining Co.'s No. 1 Bob Long, SE cor. NE NE, Section 6-14-9, was making 20,000,000 feet of gas from sand at 1,235-68 feet with a spray of oil, and was mudding off to go deeper. The Cosden Oil & Gas Co.'s No. 1 Marshall, NE cor. SW, Section 14-14-9, was drilling at 500 feet. The Twin State Oil Co. had a rig up for No. 1 Jackson, SW cor. Section 22-14-9. F. R. Billingslea's No. 2, SE cor. NE NE, Section 28-14-9, was drilling at 500 feet. The H. F. Wilcox Oil & Gas Co.'s No. 5 Scott, C NW SW NE, Section 20-14-10, was drilling at 200 feet. The Eastern Oil Co.'s No. 10 Roberts, NE cor. SW SE, Section 17-15-8, was spudding in. J. H. Middleton was moving in a rig for No. 1 Fields, C NE SW SE, Section 30-22-14. W. B. Grimes was building a rig for No. 5, CSL NW NW SE, Section 24-21-13.

In the Tonkawa Field

The Carter Oil Co.'s No. 7-A Clements, CSL NW, Section 34-25-1w, in the Tonkawa Field, was making 2,670 bbls. naturally from sand at 4,202-51 feet, and No. 18-A Clements, C SW NE NW, Section 34-25-1w, was making 2,846 bbls. naturally from sand at 4,141-51 feet. The Comar Oil Co.'s No. 1-W Blubaugh, NW cor. SW, Section 2-24-1w, was completed with sand at 4,260-80 feet, making 1,733 bbls. naturally; No. 8-W Blubaugh, NE cor. SW, Section 2-24-1w, sand 4,097-4,200 feet, 1,770 bbls. naturally; No. 12-W Blubaugh, NW cor. NE SW, Section 2-24-1w, sand 4,17314,253 feet, 2,957 bbls. naturally; No. 1-W Blubaugh, C NW cor. SE, Section 2-24-1w, sand 4,155-65 feet, 775 bbls. naturally with water.

The Comar Oil Co. was rigging up No. 21-W Clements, SE cor. NW NW Section 34-25-1w, and had a rig up for No. 23-W, NE cor. NW NW, same section.

Kay County

The Vernon Oil & Gas Co.'s No. 2 SW cor. SE, Section 17-29-1, Kay County, was completed for 25,000,000 feet of gas at 1,970-74 feet. The Marland Oil Co.'s No. 1, CSL SW NE NE, Section 27-27-3, was dry and abandoned at 3,720 feet. The Blackwell Oil & Gas Co.'s No. 1, SE cor. Section 9-27-1w, was making 10 bbls. an hour from sand at 2,285-87 feet. Marland Oil Co.'s No. 2 North, NW cor. NE, Section 12-26-2w, was making 966 bbls. and 45,000,000 feet of gas from sand at 2,547-54 feet. The same company's No. 1 McCullough, CNL SW, Section 12-26-2w, was completed with sand at 3,698-3,702 feet, and was making 260 bbls. of oil and 15 bbls. of water. The Marland Oil Co.'s No. 1 Hill, SE cor. NE NW, Section 1-26-2w, was completed with sand at 2,141-51 feet, making 750 bbls. naturally. The same company's No. 3 North, SW cor. SW NE, Section 12-26-2w, was also

PERFECTION VAPOR PRESSURE TANKS
WOOD, AND BOLTED STEEL TANKS

MARTIN B. SCHUSTER JOSEPH N. SCHUSTER
M. B. AND J. N. SCHUSTER

Casper, Wyoming.

December
9th,1924.

Black-Sivalls & Bryson,
Casper, Wyo.

Gentlemen:

Reference to the Perfection Vapor Pressure tanks recently installed by your company on our Salt Creek lease on their merrit and which tanks were not to be paid for until we were entirely satisfied that they would do all for us that they were represented to do in the way of savings in evaporation and also as to gas pressure, we take pleasure in stating that these tanks have given entire satisfaction and that at the present time we are using the gas from these tanks to run our entire camp which is more than we have been able to do with other tanks on our lease.

We also find that these tanks lessen our loss by evaporation. Our pumper has informed us that oil left in your tank, and an equal amount left in a tank purported to be gas tight, that the evaporation is very slight if at all noticeable in your tank while a considerable loss has been noted in other tanks on our lease.

Yours very truly,
M.B.& J.N.Schuster,
By

"We Take Pleasure in Stating That These Tanks Have Given Entire Satisfaction"

WHEN an oil company writes us Perfection tanks are giving "Entire Satisfaction," such testimony ought to bear out all we have been claiming for this indispensable lease equipment.

If you still belong to the large number of oil producers who are paying tribute to evaporation, read the letter above carefully.

In stopping all appreciable losses besides furnishing gas for fuel and light Perfection Vapor Pressure Tanks are doing for these Wyoming operators exactly what they can do for you.

It's merely applying good judgment to your business in looking up our representative in your field today.

Black Sivalls & Bryson
INC.

BARTLESVILLE ~ OKLAHOMA

Branch offices in all principal active fields

doned without spudding, and the rig taken out.

The Texas Co. abandoned its rig, No. 1 Proctor, NE cor. Section 20-29-1w. The Comar Oil Co. was building a rig for No. 2 Kincaid, SW cor. SE NE, Section 21-29-1w. The Marland Oil Co.'s No. 1-A, SE cor. NE NE, Section 27-27-3, was drilling at 250 feet. The same company was building rigs for No. 3 Hill, CSL SW SE NE, Section 1-26-2w, No. 2 Hill, SW cor. NE, Section 1-26-2w, and No. 1 SE cor. NE SE SW, Section 1-26-2w. The Prairie Oil & Gas Co. was rigging up No. 3, CNL NE NW SE, Section 1-26-2w. The Marland Oil Co. had a rig up for No. 1 Chambers, SW cor. NW NE, Section 9-25-2w. The Carter Oil Co. was drilling No. 1 Wolf, NW cor. NE, Section 10-25-2w, at 200 feet. Colcord and others were building a rig for No. 1, SE cor. SW SE SW, Section 5-28-1w. The Marland Oil Co. and the Amerada Petroleum Corp. had a rig on the ground for No. 1 Richmond, SE cor. NW, Section 1-26-2w. The Marland Oil Co. had a rig on the ground for No. 4 Hubbard, NE cor. SE NE NW, Section 12-26-2w, and for No. 3 North, SW cor. NW NE, Section 12-26-2w.

Osage County

Titus and others' No. 4, NW cor. NE, Section 12-24-11, in Osage County, was shot with 180 quarts in the Bartlesville at 1,650-70 feet, and was good for 15 bbls. The Owen Osage Oil Co.'s No. 309, C NE, Section 7-23-11, was dry and abandoned at 2,077 feet. The Atlantic Oil Producing Co. abandoned location No. 5, SW cor. NW SW SW, Section 27-25-8. The Red Bank Oil Co.'s No. 7, CSL SW, Section 20-23-8, was shot with 60 quarts at 873-903 feet, and was good for 10 bbls. The same company's No. 3, NE cor. SE NE NW, Section 29-23-8, was pumping 60 bbls. from sand at 2,874-2,903 feet. The Winona Oil Co.'s No. 1, CNL SE, Section 31-22-12, was dry and abandoned at 2,286 feet. Jackson & Wise and others' No. 1, NE cor. SW, Section 14-28-10, was making 15 bbls. after a 30-quart shot in sand at 1,740-82 feet. The Phillips Petroleum Co. and the Skelly Oil Co.'s No. 1, NW cor. NE, Section 34-29-11, was shot with 120 quarts at 984-1,011 feet, and was good for 120 bbls. The Oswego Petroleum Co.'s No. 2, SW cor. NW, Section 6-28-12, was dry and abandoned at 918 feet. The City of Pawhuska's No. 12, CNL NW SE SW, Section 26-26-8, was completed with sand at 1,146-66 feet, making 3,000,000 feet of gas. The Gilliland Oil Co.'s No. 2, CEL NE NE SE, Section 24-25-8, was completed as a 20-bbl. pumper with sand at 2,237-58 feet. The Atlantic Oil Producing Co.'s No. 3, SW cor. Section 27-25-8, was dry and abandoned at 2,850 feet. The Texas Co.'s No. 12, CWL NE, Section 29-25-8, was good for 50 bbls. on the pump after a 120-quart shot in the Bartlesville sand at 2,265-80 feet. The Magnolia Petroleum Co.'s No. 1, CNL NW, Section 34-25-8, was dry and abandoned at 2,786 feet.

The Owen-Osage Oil Co.'s No. 314, CSL NE, Section 31-29-12, was drilling at 680 feet; No. 315, CNL NW NW NW, Section 31-28-11, was spudding in. Presbury & Forness' No. 3, C NE, Section 17-27-10, had a showing of 750,000 feet of gas in sand at 1,707-30 feet, and was shut down. The New England Oil Co.'s No. 12, SW cor. SE SW SW, Section 19-25-9, was drilling at 450 feet. The Steyner Oil Co. had a rig up to deepen No. 4, SE cor. SW, Section 24-25-9. The Dresser Oil Co. was spudding in No. 16, NE cor. SW, Section 34-25-9. The Rex Oil Co. and the Pyramid Oil Co. had a rig up for No. 1, SE cor. NE, Section 29-24-10. Breene and others were spudding in No. 6, SE cor. NW SE SW, Section 14-21-10. The Tidal Oil Co.'s No. 6, CNL NW, Section 31-21-12, was rigging up to deepen, old total depth 1,320 feet. The Sand Springs Home was rigging up No. 1, CSL SW SE NW, Section 29-20-11, which was burned when ignited from gas coming from sand at 1,300 feet. The Mid-Kansas Oil & Gas Co.'s No. 2, SE cor. SW SE SE, Section 20-25-8, a twin well, was drilling at 300 feet. The Devonian Oil Co.'s No. 3, CWL SE, Section 34-25-11, was making 1,250,000 feet of gas from the Bartlesville at 1,669-98 feet, and was drilling at 1,754 feet. The Twin State Oil Co. had a rig up for No. 8, CNL NE, Section 13-23-8. The Red Bank Oil Co. had a rig up for No. 6, CSL NE NE NW, Section 29-23-8. The Indian Territory Illuminating Oil Co. was rigging up a machine for No. 2, NE cor. NW, Section 34-29-11. Duffield & Howard were spudding in No. 1, NW cor. SW SE, Section 28-28-11. The Owen Osage Oil Co. was spudding in No. 315, CNL NW NW NW, Section 31-28-11. The McCoach Petroleum Co. was spudding in No. 1, NE cor. NW SE, Section 13-25-6. The Mid-Kansas Oil & Gas Co.'s No. 1, CSL SE SE SE, Section 20-25-8, had 6,000,000 feet of gas in sand topped at 626 feet, and was drilling at 628 feet. The Texas Co. was building a rig for No. 14, C NE, Section 29-25-8. The Gilliland Oil Co. had a rig up for No. 1, NW cor. NE NW NE, Section 30-25-9.

Burbank Field

The Skelly Oil Co.'s No. 3, CEL NE SE SW, Section 26-27-5, in the Burbank Field, was dry and abandoned at 3,378 feet.

New and drilling operations include Phillips Petroleum Co.'s No. 8, CEL NE SE SW, Section 12-27-5, drilling at 805 feet; same company's No. 15, CNL NW NE SW, Section 12-27-5, rig up; Lewis Oil Co.'s No. 2, CNL NE NW NE, Section 21-26-6, drilling at 600 feet.

The Phillips Petroleum Co.'s No. 8, CEL NE SE SW, Section 12-27-5, was drilling at 500 feet. The same company's No. 15, CNL NW NE SW, Section 12-27-5, was spudding in. The Lewis Oil Co.'s No. 2, CNL NE NW NE, Section 21-26-6, was drilling at 430 feet.

Washington County

R. H. Pierce's No. 1, SW cor. NE, Section 3-20-13, Washington County, was dry and abandoned at 1,582 feet.

Pawnee County

J. L. Donahoe and others' No. 1 Zoldoski, C NW NW SE, Section 22-23-4, the discovery well of the Masham Pool in Pawnee County, was regarded as completed in sand at 3,717-24 feet, and was holding up to 440 bbls. daily of 41.3 gravity oil.

The Twin State Oil Co. had a rig up for No. 6 Flemming, NW cor. SE SE, Section 8-20-7. Wrightsman and others were building a rig for No. 1 Hill, C NE SE SW, Section 1-21-5. The Prairie Oil & Gas Co. had a rig up for No. 1 Riggs, C SW SW NE, Section 1-21-5. The Magnolia Petroleum Co.'s No. 6 Lesher, SE cor. NE, Section 21-20-6, was drilling at 300 feet. The Westerly Oil Co.'s No. 5 Smith, SW cor. NW SW, Section 22-20-6, was making 4,000,000 feet of gas from sand at 3,070-3,110 feet. The Sinclair Oil & Gas Co. was building a rig for No. 1, C NW NW NE, Section 27-23-4. The Magnolia Petroleum Co.'s No. 1, C NE SE NE, Section 5-22-3, was drilling at 300 feet; No. 1, C SE NE NE, Section 5-22-3, was drilling at 1,400 feet.

Noble County

The Wentz Oil Corp. was spudding in No. 1, C SE NE NW, Section 27-22-1, in Noble County.

Payne County

The Home Gas Co.'s No. 1 Hawk, CWL SW SW, Section 35-19-5, in Payne County, was dry and abandoned at 3,761 feet. Willis and others' No. 1 Driggs, SW cor. NW NE, Section 30-18-5, had a good show from sand at 3,252-3,317 feet.

The Mulberry Oil Co.'s No. 1, C NE NW SW, Section 5-17-4, Payne County, was drilling at 400 feet.

Okfuskee County

The Anglo Tex Oil Co.'s No. 1 Skelton, SW cor. SE SE, Section 33-12-11, was making 10,000,000 feet of gas and spraying oil from sand at 2,756-62 feet. The Windsor Oil Co.'s No. 3, SW cor. NE, Section 22-11-11, was making 50 bbls. from sand topped at 2,573 feet, at 7 feet in.

The Josey Oil Co. was spudding in No. 6 McCoy, SW cor. NW, Section 33-12-11. The Riverland Co. was spudding in No. 2, CSL SW NE, Section 30-11-11. Lou Umburn's No. 1-A, C NW NW SE, Section 35-11-11, was spudding in.

The Atlantic Oil Producing Co. and the McMan Oil Co. had a machine on the ground for No. 2 Brook, CSL NE NE SW, Section 36-12-10. The H. F. Wilcox Oil & Gas Co. was rigging up No. 1 Summers, SW cor. SE, Section 19-11-9. The Olean Petroleum Co.'s No. 2 Wind, NW cor. SW SE, Section 36-11-9, was drilling at 1,400 feet. Burke, Greis and Havell's No. 1, SW cor. SE SW, Section 1-13-7, was underreaming the 6-inch casing at 3,570 feet, with a small show of oil in the hole. The H. F. Wilcox Oil & Gas Co.'s No. 1 Summers, SW cor. SE, Section 19-11-9, was spudding in. The Prairie Oil & Gas Co. was rigging up No. 1 Grayson, C SW SW SW, Section 19-11-10. The same company's No. 3 Sawyer, C NE NE SE, Section 35-10-9, was making 20,000,000 feet of gas at 3,336-41 feet. T. B. Slick had a rig on the ground for No. 1, C SW SW SW, Section 23-6-5.

Okmulgee County

The Central National Petroleum Co.'s No. 3 Barnett, CNL NW SE, Section 34-16-9, in Okmulgee County, was making 960 bbls. naturally from sand at 2,133-55 feet. Jackson & Wise's No. 6, CWL NW SE SW, Section 3-15-11, was drilling at 600 feet. Webster and others' No. 5 Grayson, CEL SE NW SW, Section 3-15-11, was shot with 160 quarts at 1,872-98 feet, and was making 30 bbls. per day. Kellough and Thompson's No. 1 Barnett, SW cor. SE, Section 29-15-11, was making 10 bbls. an hour from sand at 2,474-2,505 feet. The Eagle Picher Lead Co.'s No. 1 Webster, C NE NW NW, Section 33-13-12, was making 335 bbls. from sand at 2,437-44 feet. The Utah Oil Co.'s No. 4 Scott, CSL SE NE, Section 15-13-14, had sands at 1,905-09 and 1,923-26 feet, from which it produced 40 bbls. on the swab.

The Amerada Petroleum Corp. was drilling at 2,330 feet in No. 1-A Hodge, NW cor. NE NW, Section 21-16-11. The Waite Phillips Co. was rigging up a machine for No. 5 Friday, C SE NW NW, Section 2-15-11. The Anglo Tex Oil Co. was building a rig for No. 5 Coleman, C SE SE SW, Section 29-15-11. The Eastern Oil Co. had a rig up for No. 1 Harrison, C NW NW NE, Section 32-15-11. The Central National Petroleum Co. was rigging up No. 1, C NW NW NW, Section 11-15-12. R. W. Vierson's No. 3, C NE SW SE, Section 2-13-12, was drilling at 2,000 feet. The Waite Phillips Co. had a rig on the ground for No. 1 Kannard, SW cor. SE SW, Section 28-13-12. The Independent Oil & Gas Co. had a rig on the ground for No. 1 Kannard, NW cor. NE NW, Section 33-13-12. Morton & Co. had a rig on the ground for No. 3 Fisher, CSL NE SE NW, Section 7-12-12. Cashey and others were spudding in No. 1-A Hawkins, CWL SW SW NE, Section 4-11-12. Schoenfeldt and others' No. 1 Hawkins, CNL NE SW, Section 4-11-12, was drilling at 1,700 feet. The Wooster Oil Co. was rigging up a machine for No. 4 Bruner, CEL SW SW, Section 11-11-13.

McIntosh County

W. B. Pine's No. 2 Hawkins, SW cor. Section 20-12-14, was spudding in at 100 feet. E. O. Sargent's No. 2 McIntosh, SW cor. Section 29-11-14, topped sand at 3,465 feet and was showing 500,000 feet of gas.

Hughes County

The Berry Petroleum Co.'s No. 1 C SE SW SW, Section 1-8-8, in Hughes County, was spraying 50 bbls. from sand at 3,417-43 feet. The same company's No. 2, C SW SW SW, Section 1-8-8, was abandoned at 710 feet. The Tidal-Osage Oil Co.'s No. 2 Sutton, C SW NW SW, Section 3-9-11, was making 18 bbls. an hour from sand at 2,882-93 feet. The same company's No. 1 Sutton, NW cor. SW, Section 3-9-11, was making 22 bbls. an hour from sand at 2,882-90 feet and No. 4 Baker, C SW NW SE, Section 4-9-11, was making 125 bbls. a day from sand at 2,984-55 feet.

The Superior Oil Corp and others' No. 1 Morrison, C SW SW SE, Section 20-9-9, was spudding in. The Prairie Oil & Gas Co. was rigging up No. 1 Carter, C SE NE SE, Section 34-8-8. The Tidal-Osage Oil Co.'s No. 1, C NW SE SW,

(Continued on Page 118)

Kansas Oil Field News

By C. D. Lockwood

The Rainbow Bend Field, in Cowley County, had its twenty-eighth well brought in last week when the Waite Phillips Co.'s No. 4 Johnson, NW cor. SW SE, Section 20-33-3, started flowing at the rate of 130 bbls. an hour from sand at 3,204-45 feet. By the end of the first 24 hour it has made 3,500 bbls., and on Monday was flowing at the rate of 3,000 bbls. per day.

Rainbow Bend on Saturday showed a production of 14,230 bbls., and operators are expecting several new wells to be drilled in within a week. As yet, the field is defined in only one direction, as the Waite Phillips Co.'s No. 1 Paterson, SE cor. NE, Section 18-33-3, was a dry hole. However, this well is half a mile from the nearest producer, and a considerable amount of productive territory may be found between the two wells. Locations staked in Kansas during the week ended February 7, numbered 59, which was 13 more than the number for Oklahoma during the same period. New rigs completed numbered 78, while there were 190 drilling wells and 170 wells shut down. During that week there were 13 wells completed, of which 9 were producers, making a combined initial production of 2,945 bbls. There was one well completed as a gas well, and three dry holes.

Cowley County

T. B. Slick's No. 1 Waite, NE cor. SW, Section 19-32-3, in Cowley County, was completed with sand at 2,610-18 feet, making 220 bbls. and 15 per cent water. The Waite Phillips Co.'s No. 1 Glasgow, SE cor. SW, Section 20-33-3, in the Rainbow Bend Field, was completed with sand at 3,210-49 feet, making 750 bbls. the first 24 hours. The Waite Phillips Co.'s No. 9 Wertman, C SW NW NE, Section 20-33-3, was completed with sand at 3,178-3,212 feet, making 40 bbls.; No. 10 Wertman, C SE NE NW, Section 20-33-3, had sand at 3,203-31 feet, making 440 bbls. The Marland Oil Co.'s No. 1, C SE SE SW, Section 13-32-4, in the Winfield Pool, was swabbing 46 bbls. from sand at 2,983-3,005 feet, total depth 3,055 feet. The Marland Oil Co. and Neely's No. 1 Rockwell, C SW SW NE, Section 13-32-4, was completed with sand at 2,541-49 feet, making 221 bbls. The J. A. Hull Co.'s No. 10 Kukuk, SW cor. NW NE, Section 24-32-4, was shot with 120 quarts at 3,000-38 feet, and was good for 75 bbls. The same company's No. 8-A Wallace, a twin well, was shot with 110 quarts at 2,332-64 feet, and was good for 75 bbls.; No. 3 Newman, NE cor. NW SW, Section 24-23-4, was swabbing 280 bbls. from sand at 2,973-3,034 feet; No. 5 Newman, NE cor. SW, Section 24-32-4, was given shots of 20 and 10 quarts at 2,983-3,042 feet, and was swabbing 120 bbls.

T. B. Slick had a rig on the ground for No. 1-B Waite, NE cor. SW, Section 19-32-3, a twin well. The Carter Oil Co. was spudding in No. 2 Waite, NW cor. SE, Section 19-32-3. T. B. Slick was spudding in No. 1-B Carson, SW cor. NE, Section 19-32-3. The Waite Phillips Co. was rigging up No. 3 Johnson, SE cor. NE SE, Section 9-33-3. The Roxana Petroleum Corp.'s No. 1-A Johnson, NE cor. NW SE, Section 9-33-3, was drilling at 400 feet, while No. 2, C SE NW SE, same section, was spudding in. The Marland Oil Co. was spudding in No. 2 Bower, C NW SW NW, Section 10-33-3; No. 3 Bower, C SE SW NW, and No. 4 Bower, C NE SW NW. The Roxana Petroleum Corp.'s No. 3 Spruens, C NE NW SW, Section 10-33-3, was drilling at 900 feet, while No. 4 Spruens, C SE NW SW, was drilling at 300 feet. The Waite Phillips Co. and others had rigs up for No. 1 Douthit, C SE SE SE,

(Continued on Page 118)

"OILWELL" ESTD 1862 TRADE MARK REGISTERED

BOILERS

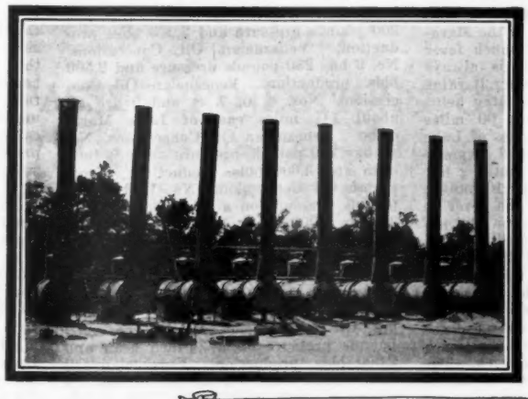
All operations during construction and also the final test are carefully inspected by an inspector who has been examined and licensed for such work. This inspector is not in our employ, but is employed by a company making a business of furnishing such inspectors.

All boilers upon completion carry a stamping in accordance with the Code.

"OILWELL" Oil Country Boilers are made in various sizes from 25 to 100 H.P. and in locomotive and tubular (A. S. M. E. Code), Burma, Canadian and regular oil country locomotive types.

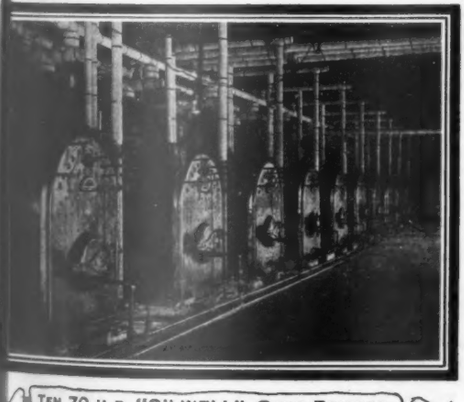
For complete information inquire at any of our 100 Branches.

TWELVE 70 H. P. "OILWELL" CODE BOILERS, LOS ANGELES COUNTY, CALIF.

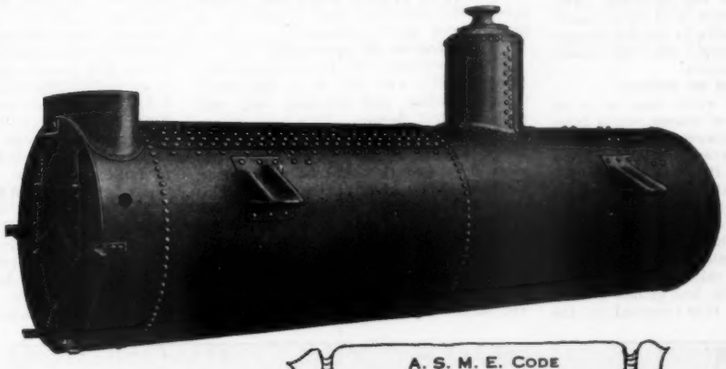


EIGHT 70 H. P. "OILWELL" CODE BOILERS, OIL TREATING STATION, EL DORADO, ARK.

50 H. P. "OILWELL" CODE BOILER IN FRANCE.



TEN 70 H. P. "OILWELL" CODE BOILERS, AT LULING, TEXAS.



A. S. M. E. CODE HORIZONTAL TUBULAR TYPE.

UPPLY CO.

QUIPMENT

BRANCH STORES IN ALL OIL FIELDS

"OILWELL" ESTD 1862 TRADE MARK REGISTERED

Active Drilling Campaign in Venezuela

Venezuela Oil Concessions, Lago Petroleum and Venezuela Gulf Companies Pressing Operations Around Lake Maracaibo and La Paz

By Staff Correspondent

MARACAIBO, Venezuela, Feb. 8.—Lake Maracaibo is generally shallow; according to charts of the Venezuela Government there is no place in the lake that is more than 40 feet deep. The Venezuelan Gulf Oil Co. and the Lago Petroleum Co. at La Rosa, and the Caribbean Petroleum Co. (Dutch-Shell) at San Lorenzo, each built wharves 1,000 yards out into the lake to obtain 14 feet of water. The Gulf of Venezuela is also more or less shallow as the Venezuelan Gulf Oil Co. is building a loading wharf 2,000 yards out into the gulf to obtain 30 feet of water. In one way this is very favorable to the Venezuelan Gulf Oil Co. and the Lago Petroleum Co., as they have the concession to drill in the lake and it will not be too deep to drill at any place. If the structure at La Rosa runs all the way across the lake which is about 30 miles wide at this point, it will only be a matter of getting long pine poles to drill in the deeper water.

The bar entering Lake Maracaibo has 11 feet, 4 inches of water at high tide and the channel is very narrow and not well marked. The boats in going through have to zig-zag back and forth for about 20 miles before they are in safe water on either end. One of the larger oil companies here estimated the cost of dredging this bar and channel, building sea walls and jetties at a cost of $90,000,000 United States currency and as this country does not make a practice of doing much improvement and will not give anyone else a favorable concession or contract to do it, it will probably never be done.

All the rivers running into Lake Maracaibo also have very shallow bars, which will never be dredged unless the oil companies do it. The most important one is the Catatumba River, which runs up into the Colon district towards the Colombian border. This river has from 15 to 20 feet of water and there is only 3 feet on the bar. From the bar entering Lake Maracaibo, south, water is of course more or less salty, more salty in the dry season than in the wet season. The wet season is from June to January.

Water Hard on Boilers

About all of the water that is to be had in this district, of course, comes from Lake Maracaibo, because it is all desert for 50 miles in every direction from Maracaibo and on the east side of the lake also. The water is very hard on boilers and everything that it comes into contact with. All of the water used for drinking purposes has to be condensed. There is some shallow well water but that too is a little salty. The Standard Oil Co. of Venezuela has drilled several wells for water at this terminal on the east side of the lake and they have all turned out salty. It is drilling another one now, with a rig and is down 200 feet in heaving water sand but no flow of water.

All wooden boats, piling or anything of wood used in the lake has to be covered with something, boats with copper, and piling with cement, as the toredos (marine borers) are very bad here. Most of the oil companies use a very hard native wood for piling, called vera; it is so hard that you cannot drive a nail in it and they cover it with cement. This piling was put in by one of the large companies with no covering and was all eaten to pieces in two months.

Climatic Conditions

The climatic conditions here are not bad at all as it never gets warmer than 85 in the shade or cooler than 50 and there is always a cool breeze in the Maracaibo district. There is not much fever in this district either as it is always quite dry here a few hours after it rains and, of course, the desert country helps a lot. From a point about 60 miles south down to the lower reaches of Lake Maracaibo it is quite wet and swampy and in some places there is nothing but swamps and lagoons for 75 to 100 miles. In these places, of course, the fever is very bad and in the wet season the natives die off like flies. In such districts the mosquitos, sand flies and flies and all sorts of insects live by the millions, billions and trillions. But in the Maracaibo district there are very few insects of any kind. A person can sleep out of doors 365 days in the year here in a hammock and in a breeze and never get sick. The native houses in all of these countries for the most part are built of poles cut from the jungles and tied together to form a wall about 1 foot thick and then filled up with mud. The roofs are either tile or palm thatched and tile and brick are quite cheap in these countries. There is a nice red cedar that grows in this country but it is quite scarce and is used mostly for furniture and is sold at a higher price than mahogany.

Progress of Operations

The Venezuelan Oil Concessions, Ltd. (Dutch-Shell) well No. 19 is still sanded up, bailing and washing out, will probably drill deeper. This is a rotary outfit. Venezuela Oil Concessions No. 20 is drilling at 1,800 feet, about two more days and this will be a producer, good for 3,000 bbls. at the least. This well is also rotary. Venezuelan Oil Concessions No. 21 (cable tools) is drilling at 620 feet in sticky blue and red shale, carrying 15¼-inch casing. Venezuelan Oil Concessions No. 22 (cable tools) is drilling at 280 feet in sticky blue and red shale, using wire line and spudding shoe. Venezuelan Oil Concessions No. 16 (cable tools) is drilling at 1,350 feet in clam shells, running 10-inch casing. This well is more or less of a wildcat and will not be more than a 300-bbl. producer at the best.

Of the producing wells of the Venezuelan Oil Concessions, Ltd., the gas pressures are about the same as the other companies. Venezuelan Oil Concessions No. 4 has no gas pressure and no production. This No. 4 is the well that ran wild in this field in December 1922. Venezuelan Oil Concessions No. 6, offset to No. 4 and the shallowest well in the field, has a pressure of 175 pounds. and a production of 1,500 bbls. on a ⅞-inch beam. Venezuelan Oil Concessions' No. 7 has 250 pounds pressure, 2,000 bbls. production on a 1-inch bean. Venezuelan Oil Concessions' No. 8 has 200 pounds pressure and 2,000 bbls. production. Venezuelan Oil Concessions' No. 9 has 280 pounds pressure and 2,500 bbls. production. Venezuelan Oil Concessions' Nos. 4, 6, 7, 8, and 9 are all about 1¼ miles east of Lake Maracaibo. Venezuelan Oil Concessions' No. 15 has 280 pounds pressure on a ⅞-inch bean and 3,000 bbls. production. Venezuelan Oil Concessions' No. 14 has 200 pounds pressure on a ¾-inch bean, production 1,000 bbls. Venezuelan Oil Concessions' No. 13 has 340 pounds pressure on a 1-inch bean, 3 500 bbls. production. Venezuelan Oil Concessions' No. 12 has 175 pounds pressure on a ⅞-inch bean, 1,500 bbls. production. Venezuelan Oil Concessions' No. 11 has 230 pounds pressure on a ⅞-inch bean and 2,000 bbls. production. Venezuelan Oil Concessions' Nos. 11, 12, 13, 14, 15, are all on the lake front about 100 to 300 feet from the waters edge.

The Lago Petroleum Co.'s No. 5 and No. 13 are still sanded up. They are going to put in perforated pipe as this has not been tried in this field. Lago No. 6 has cemented 10-inch casing at 1,765 feet in blue shale. Lago No. 7 is about ready to start drilling. This company uses nothing but rotaries from top to bottom. Lago Petroleum Co.'s No. 4 has 350 pounds pressure on a 1-inch bean, 3,800 bbls. production. Lago No. 3 has 340 pounds pressure, 1-inch bean, 3,000 bbls. production. Lago No. 1 has 350 pounds pressure, ⅞-inch bean, 3,000 bbls. production. All of these wells are in Lake Maracaibo.

Deepest Well in Field

The Venezuelan Gulf Oil Co.'s Nos. 1 Michigan and No. 2 Superior, are sanded up and putting in perforated pipe. No. 1 Superior is producing about 4,000 bbls. on a ⅞-inch bean and has a pressure of 375 pounds. This well is out in Lake Maracaibo about 600 yards. It is the second deepest well in the field, 1,910 feet, and the best producer at the present time. No. 5 Superior is drilling at 220 feet. This well is in line and between No. 1 and 2 Superior. This company uses rotaries from top to bottom. The greatest gas pressure ever recorded in this field was on Lago Petroleum Co.'s No. 1 when it first came in about six months ago; it had 550 pounds pressure. All of these wells flow more or less sand. And sand is the greatest trouble in this field and, in fact, the whole country.

The Venezuelan Oil Concessions Ltd. has two drilling wells and one derrick and foundations and locations for about 15 more wells in the back country from 1 to 2 miles east of the lake, but they are beginning to realize that the best production is on the lake front and in the lake. The Venezuelan Oil Concessions Ltd. (Dutch Shell) was offered this Lake Maracaibo concession a number of years back for almost nothing but turned it down flat. The Lago Petroleum Co. has the whole of Lake Maracaibo with the exception of a few small prices which are controlled by the Venezuelan Gulf Oil Co.

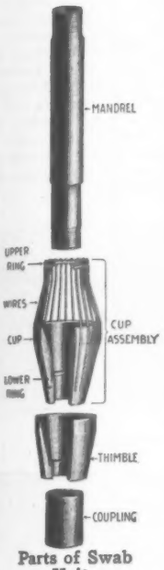
Activity in Perija

The Colon Development Co. (Dutch-Shell) is putting on quite a drilling program on its leases in the Perija district near the Colombian border. It has about 2,500 bbls. production there now from four wells and three different gravities, 20, 28 and 32 Baume. It is starting eight new wells at once and figuring on a pipe line soon. This line will run to Lake Maracaibo and will be about 300 kilometers long. The Atlantic Refining Co. has a lease in this same district and the Venezuelan Gulf Oil Co. is going to drill two wells on it for them. The Texas Co., the Pantepec Petroleum Co., the Colombian Petroleum Co. and the Standard Oil Co. and several other companies have large holdings in this district and it is the best looking oil district in Venezuela.

The Venezuela Gulf Oil Co. shipped its first cargo of oil from its Cabimas terminal (La Rosa Sector) on January 18 in one of its new shallow draft tankers, the "Cabimas." The first load was 12,000 bbls. and it went to the deep sea loading terminal out on the Paraguana Peninsula. A sister ship to the "Cabimas" will be here shortly, the "Paraguana." This company has one well at El Monte in the Mene Grande Sector which has twisted off the drill pipe at 2,800 feet. At Iguana, west side of Lake Maracaibo, same company has a wildcat well which is down about 2,600 feet without much showing. The only real work to speak of is at La Rosa. Venezuelan

La Rosa Field, showing rigs of the Venezuela Oil Concessions, Ltd., Lago Petroleum Co. and Venezuela-Gulf Oil Co.

Revolutionized Swabbing



Parts of Swab Unit

Cup Assembly, Showing What Is Received When New Cups Are Ordered

Used by Men Who Condemned Swabbing as Dangerous

By providing, at last, an EFFICIENT Swab, the GUIBERSON Swab has changed the entire attitude of the petroleum world toward swabbing. Swabbing is no longer regarded as an uncertain—even dangerous—process.

WHY?

PASSES PROJECTIONS. GUIBERSON Swabs, due to their flexible cups, pass through badly indented or partially collapsed casing where ordinary swabs will not pass.

NEEDS NO SINKER. Going down, GUIBERSON cups allow the fluid to by-pass. They go down rapidly without a sinker.

DOES NOT STICK. With GUIBERSON Swabs, sticking, and tearing off of rubbers are unknown.

NON-LEAKABLE. The correct principle of the GUIBERSON Swab, and its use of three cups in series, renders it practically non-leakable.

DURABLE. The special composition cups are amazingly durable, so that swabbing has become an ECONOMICAL operation.

"Better Be Safe Than Sorry"

THE GUIBERSON CORPORATION
Box 1106, Dallas, Texas

CALIFORNIA BRANCH: 1737 E. 7th St., Los Angeles

318 First Nat'l Bank Bldg., Houston

506 Trust Bldg., Newark, O.

402 W. First St., Tulsa

276

GUIBERSON

BETTER BE SAFE THAN SORRY

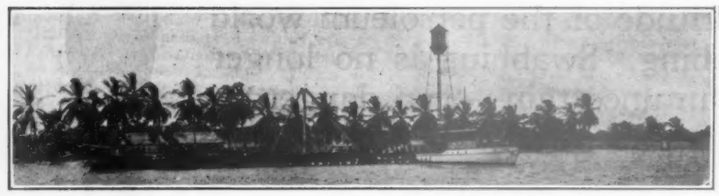
Oil Concessions' Ltd., is about the only company here that does much cable tool work, most everything here being rotary. This is a very loose and caving formation. On cable tool wells in the La Rosa sector they run four strings of pipe, 20-inch 200 feet; 15-inch 800 feet cemented; 12-inch 1,200 feet cemented; 10-inch just above the oil sand cemented and 8-inch oil string. The rotaries run two strings of pipe only: 15-inch 1,200 feet cemented and 10-inch cemented just above the oil sand.

In La Paz the Venezuelan Oil Concessions No. 3 is drilling at 1,770 feet; small showing of oil and gas. Venezuelan Oil Concessions' No. 4 has 1,000 bbls. production and is shut in. Venezuelan Oil Concessions' No. 5 has a fishing job at 300 feet. Venezuelan Oil Concession No. 6 is a derrick. Venezuelan Oil Concessions' Nos. 7, 8, 9, 10, 11, 12, 13, 14 and 15 are locations. At La Concepcion, in the La Paz district, the same company has Venezuelan Oil Concessions No. 1 drilling at 2,100 feet. Running 8-inch casing, some gas. Venezuelan Oil Concessions No. 2 is drilling at 320 feet, running 15½-inch casing. This company is going to drill 600 wells in this and the La Paz districts as it has 1,000 bbls. production at about 800 feet.

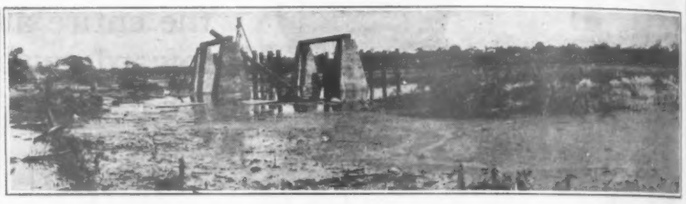
The Venezuelan Gulf Oil Co. drilled a well about 10 kilometers north of La Concepcion to a depth of 3,500 feet for a dry hole. The Standard Oil Co. of Venezuela is drilling one well at Palmarejo, about 10 kilometers north of the city of Maracaibo and on the very edge of Lake Maracaibo. At Iguana the Venezuela Gulf Oil Co. is drilling one well, with a diamond drill outfit; down about 3,000 feet with not much showing.

The New England Oil Co. Ltd. is drilling two wells to the south of the Mene Grande district. The Caribbean Petroleum Co. (Dutch-Shell) at Mene Grande is drilling three new wells and have locations for about 20 more wells. The Standard Oil Co. has abandoned the Los Barrosos lease, pulled the casing in all five wells and moved out everything. The Venezuelan Gulf Oil Co. drilled one well in this same district, which is about 6 kilometers north of Mene Grande. This well was drilled on New England Oil Co. Ltd. property and is considered dry at 2,900 feet.

The Standard Oil Co. is just starting operations in Perija (this is in the wild Indian country near the Colombian border). It has the rig up for well No. 1 and is sending three drilling crews up there. Perija is about 300 kilometers up the Santa Ana River from Lake Maracaibo. There are several other companies doing a small amount of work in this district. This same company has one well at La Vela, in the State of Falcon, drilled to a depth of about 3,500 feet, which is dry. At Dabajuro, same state, same company has three wells drilling, derricks for three more and locations for several more. The Sun Co. is not doing any drilling at present but has a drilling program mapped out for the near future. The total production for the five producing companies at present is Caribbean Petroleum Co., Mene Grande 25,000 bbls.; Venezuelan Oil Concessions, Ltd. (Dutch-Shell) at La Rosa 15,000 bbls.; Venezuelan Gulf Oil Co., 3,000 bbls.; Lago Petroleum Co., 10,000 bbls.; British Controlled Oil Fields Ltd., 5,000 bbls. The total production for Venezuela for the year 1924 was about 25,000,000 bbls.



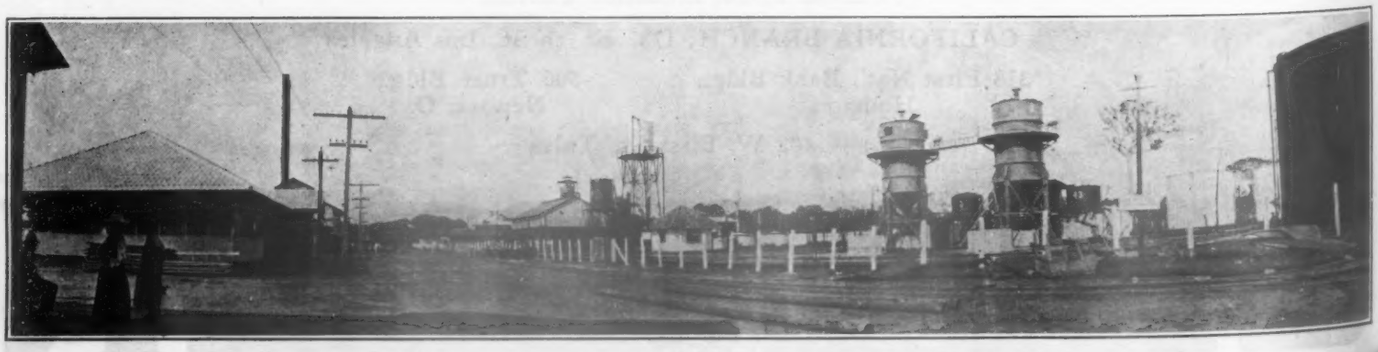
Venezuela-Gulf Oil Co. terminal at Bella Vista on Lake Maracaibo.



Foundation for well in swamp back of Lake Maracaibo.

Maracaibo Lake front at La Rosa Field, showing derricks of Venezuela Oil Concessions, Ltd., Lago Petroleum Co. and Venezuela-Gulf Oil Co.

Machine shops, supply house and part of Mene Grande Field.



Offices, pump station and refinery of Caribbean Petroleum Co., at San Lorenzo.

WHY NOT LET AXELSON RODS AND PUMPS HELP YOU ROLL UP THE BIGGEST AND BEST YEAR YOU HAVE EVER HAD!

The fact that our quality products lead in every field is pretty convincing evidence that we have kept faith with every one of our customers during these twenty-seven years we have served oil producers.....Send today for interesting literature describing in detail Axelson Pumps and Sucker Rods.

Axelson Machine Company

General Office and Western Factory: Corner Boyle Ave. and Randolph St., Los Angeles, Calif. P. O. Box 337.
Mid-Continent Office: 1023 Kennedy Building, Tulsa, Oklahoma
Mid-Continent Distributors: Frick-Reid Supply Co.
Eastern Distributors: Frick-Lindsay Supply Co.
Casper, Wyoming, Office: with Frick-Reid Supply Co.
New York City Office: 30 Church Street.

THERE IS NO ECONOMICAL SUBSTITUTE FOR QUALITY

THERE IS NO ECONOMICAL SUBSTITUTE FOR QUALITY

California Field Operations

By L. P. Stockman

Associated Oil Co. brings in another big well in Ventura Avenue Field at depth 130 feet greater than other producer. Considerable wildcatting being carried on throughout State. Two producers completed at Rosecrans. Largest well for this year finished at Long Beach; makes 1,246 bbls.

LOS ANGELES, Cal., Feb. 14.—Two new wells were put on production in the Rosecrans section during the past week and the finishing touches were being put on several others, which will be tanking oil within the next two weeks. The Associated successfully finished No. 1 Haviland at 4,909 feet with a 4¾-inch oil string carrying 50 feet of 100-mesh screen landed on bottom. On its initial production test the well made 626 bbls. of clean 38.2 gravity oil. The completion of this hole leaves the Associated with but two drillers in this area, No. 1 Hoge at 4,936 feet and No. Wanka at 4,303 feet and these two will undoubtedly be on production within a short time. Unless the company acquires some acreage in the northern part of the field, it will not be able to undertake any new development work, as its present acreage is practically all drilled up.

The Barnsdall finished an excellent flowing well in No. 3 Rosecrans, drilled to 3,952 feet and finished it with a 6¼-inch oil string carrying 100 feet of 100 mesh screen. The first tank gauge was 1,063 bbls. of 37.1 gravity oil which cut 1 per cent. The company finished No. 4 Rosecrans at 4,008 feet and will begin swabbing tomorrow. At least a 1,000-bbl. well is expected. The Barnsdall, in finishing the latter, established a nice record in the landing of 3,958 feet of 8⅝-inch and a cement job, requiring 300 sacks, in 12 hours and 55 minutes. On the O'Dea lease, the company is cleaning out No. 2 and drilling ahead in No. 3 at 3,950 feet. New rigs are being erected for No. 4 O'Dea and No. 5 Rosecrans.

Cement 6,606 Feet of 6¼-inch

E. L. Blanton, heretofore operating at Long Beach, has erected his first rig at Rosecrans and will spud in, it is reported, during the coming week. The General Petroleum landed and cemented 6,606 feet of 6¼-inch in No. 1 Amestoy and, although this is perhaps the longest string of 6¼-inch put into a well, no trouble or difficulty of any kind was experienced. No. 1 Amestoy exhibited favorable symptoms at 6,666 feet but there is some doubt as to whether commercial production will be secured. E. J. Miley is making fair progress with his No. 1 Athens, which has been carried down to 5,238 feet in search of deep production and will probably have the hole reamed and claned out to bottom shortly. He picked up the pay in No. 3 at 5,118 feet and is still in the sand at 5,140 feet. Nos. 4, 5 and 6 are not yet deep enough, although No. 4 at 4,880 feet, No. 5 at 4,655 feet and No. 6 at 4,350 feet have only a comparatively short distance to go. The Mohawk completed No. 1 Mahler at 4,740 feet with an 8⅝-inch oil string and should have the hole on production shortly. No. 1 Brooks will probably also be on production in the near future as a core sample at 4,310 feet revealed an excellent oil sand. In addition to those two holes, the Mohawk is rigging up No. 1 Dixon and No. 1 Bateman.

The Petroleum Midway (California Petroleum) is expanding its drilling program in this field and the company, in addition to one producer, No. 1 Colby, making around 150 bbls. a day, is working on six holes. The company is circulating with oil No. 1 Baskin at 4,300 feet in an effort to release a core barrel which became lodged in the hole. No. 1 A Ducommon is going nicely at 4,076 feet and No. 1 McCormick is making good progress at 4,300 feet. The company took a core in No. 1 Folsom at 4,645 feet but, since the sample did not reach to the ether test, the company has resumed drilling and is at present going ahead at 4,700 feet. No. 1 Fox is drilling ahead in a hard sandy shale at 3,048 feet, while No. 1 Kreitz Community is going ahead in a hard sandy shale at 3,790 feet.

The Sentinel Oil Co. has gone into No. 1 Athens, a recent gasser at 5,410 feet and will plug back and endeavor to successfully finish this hole if possible. The well, in addition to the large gas output, made about 100 bbls. of oil and considerable water and the company has hopes of being able to plug back and exclude this water. A good oil sand was cored in No. 2 at 4,920 feet and if this formation continues the well will be prepared for an early test. No. 3 has been cemented at 4,703 feet and will be drilled ahead around the end of the week. A rig is going up for No. 4.

Outpost Holes Unfavorable

None of the outpost holes registered any improvement during the past seven days. In the northwest, the Shell's No. 1 Leonis at 5,280 feet and the Pan American's No. 1 Anderson at 4,397 feet are still in a rather uninteresting stage. The Standard has reached a depth of 5,918 feet in No. 1 Cowan and a duster is being freely predicted. The Star Petroleum is experiencing considerable difficulty with No. 1 Shoemaker, drilled to 4,612 feet and, although the well is good for around 600 bbls. a day, nearly half of the output is water. The flow has just been killed and some additional work done on the hole. The St. Helens Petroleum is drilling in a hard shale in No. 1 Rowell in the southern part of the field at 5,065 feet with only a small chance of securing commercial porduction. The Tidal Oil Co. is making good progress in No. 1 McKeon, now at 4,270 feet, and an early completion is anticipated. The Union has apparently established the outer limits in the southwestern part of the field with No. 1 Gordon, which is still dry at 6,350 feet. The company got a very satsfactory showing in No. 9 Howard Park at 4,300 feet midway between its No. 1 Howard Park and E. J. Miley's northwestern extension, No. 1 Athens, and will set a string of pipe around 4,315 feet.

Torrance

There were two new wells and three clean-out jobs finished at Torrance during the past seven days. The best well finished was the Superior Oil Co.'s No. 58 Torrance, which was drilled to 3,794 feet and finished with a 6¼-inch oil string carrying 300 feet of 60-mesh screen. When put on the beam it pumped 260 bbls. of 20.4 gravity oil which cut 3 per cent. The Standard's No. 2 on Marble Lease No. 2 was also a pumper. It was drilled to 3,825 feet and finished with an 8⅝-inch oil string and 2,822 feet of 2½-inch tubing. The initial pumping was 121 bbls. of 19.1 gravity oil which cut 2 per cent sand and water.

The three recompletions were No. 8 Bluemle of the Shell and No. 1 Kettler and No. 7 Dominguez of the Standard Oil Co. No. 8 Bluemle was returned to production after being cleaned out to bottom, 3,860 feet, and pumped 65 bbls. of 16.4 gravity oil which cuts 4 per cent. No. 1 Kettler, put on the beam after being redrilled and cleaned out to 3,858 feet, started off pumping 65 bbls. of 18.2 gravity oil. No. 7 Dominguez, plugged back from 3,865 feet to 3,810 feet, was returned to production pumping at the rate of 52 bbls., the oil testing 17.6 degress.

The Consolidated Mutual put No. 1 Campbell on a preliminary test a week or so ago and, although it was making considerable water at that time, pumping was continued in the hope that the production might clean up. The well is still exhibiting symptoms of bottom water, however, and will probably be worked on again. The Chanslor-Canfield Midway Oil Co. is abandoning No. 1 Francis, drilled to 6,538 feet, after plugging back and testing out a few minor showings found between 4,250 feet and 3,900 feet. The company's other deep hole, No. 2 Dominguez at 5,091 feet, will probably experience a similar procedure in the near future. The Shell has plugged back its deep test, No. 2 Kettler, in the Lomita section, from 5,373 feet to 4,565 feet and will make a thorough production test, as the showing found at this depth was the only encouragement which the hole gave.

Long Beach

The Shell, in finishing No. 23 Alamitos at Long Beach, recalled to memory some of its early successes on this lease and, although the property is practically all drilled up, deepening work and clean-out jobs will prolong its output. The Shell's latest completion, No. 23 Alamitos, was drilled to 4,822 feet and finished with a 6¼-inch oil string carrying 1,105 feet of 60-mesh screen. Flowing through a ⅞-inch bean under a pressure of 500 pounds, the well made 1,246 bbls. of clean 28.6 gravity oil during the first full 24-hour test. This is the largest well finished during the current year to date and it would not be surprising if it retained this honor during the remaining 10 months of the year. By a strange coincidence, the Shell made this latest record but a short distance from the discovery well, which has since been deepened.

The San Martinez Oil Co. finished a small pumper in No. 5 Booth, put on the beam at 4,205 feet, after being finished with an 8¼-inch oil string. The initial pumping was 182 bbls. of 22.8 gravity oil which registered a cut of 3 per cent. The Bay Hills Oil & Land Co. has finished deepening No. 2 Special Delivery and will run in the oil string within the next day or so. The hole has been looking fairly good and the company expects a nice producer. The California Refining Co. is erecting a rig, offsetting the Big Bear Oil Co.'s well No. 1, and will start work on this, its first hole, in about two weeks.

Neal Anderson and A. J. Delaney have organized the Deland Oil Co. and taken over the Hall-Weber Syndicate's No. 1-A, now standing cemented at 3,702 feet. The company will finish incompleted holes on a royalty basis and as soon as No. 1-A Hall-Weber is put on production, additional work will be undertaken. The Associated has picked up the oil sand in No. 2 Wardlow at Huntington Beach at 3,525 feet and, if the sand is of sufficient thickness, an early test will be made. The Standard got a substantial showing of oil in No. 18 Bolsa Chica at 4,995 feet and there is a possibility that the hole may yet be finished as a commercial producer. Because of the extreme depth, however, the company only has an outside chance of bringing in a good well. There is very little work of interest being done at Santa Fe Springs, due, chiefly, to the heavy decline in production and it is doubtful if any amount of new drilling will be undertaken.

Inglewood

The Standard Oil Co. completed another well at Inglewood during the past week by bringing in No. 3 on Los Angeles Investment lease No. 1, after drilling to 2,519 feet and finishing with an 8⅝-inch oil string carrying 360 feet of 80-mesh screen. The initial output, 280 bbls., tests 18.3 degrees and shows a cut of 4 per cent. This completes the Standard's present drilling program on Los Angeles Investment lease No. 1, but a new rig for No. 2, an offset to the Pan American's No. 1 Sentous, is being erected on Los Angeles Investment lease No. 2. No. 1 on this property is still dry at 4,851 feet and seems to have only an outside chance of completion. The Standard's No. 1 Stocker at 4,185 feet is also dry, as is No. 1 Potter-Smith at 5,817 feet.

The Standard is just now concentrating its attention on the Vickers property and will, within a short time, spud in three holes. The finishing touches are being put on the rig for well No. 2 on Vickers lease No. 1, while construction is starting on the rig for well No. 3 on the same lease and the derrick for well No. 1 on Vickers lease No. 2. Oscar Howard made excellent time drilling his first hole in this new area and, since it

(Continued on Page 90)

TANKER SHIPMENTS FROM LOS ANGELES TO ATLANTIC AND GULF COAST PORTS

Following is a list of tankers, date departed, destination, kind of cargo and amount in barrels:

Agwibay, February 2, New York, crude	95,706
Sunbeam, February 5, New York, crude	76,540
Robt. E. Hopkins, February 3, New York, crude	75,762
Coastwise	
Richmond, February 2, Richmond, crude	65,117
Tejon, February 3, Portland, fuel	74,257
Mojave, February 4, Portland, fuel	73,935
Capt. A. F. Lucas, February 4, San Diego, refined	36,914
Los Angeles, February 4, Martinez, crude	75,168
La Purisima, February 4, San Diego, refined	20,911
U. S. Tanker Kanawha, February 5, San Diego, fuel	50,826
W. S. Miller, February 5, Richmond, crude	75,816
Warwick, February 6, Seattle, refined	39,877
Cathwood, February 6, Martinez, crude	75,810
Capt. A. F. Lucas, February 6, Willbridge, refined	35,802
El Segundo, February 6, Willbridge, refined	32,694
Deroche, February 7, Martinez, crude	75,514
La Purisima, February 8, Seattle, refined	35,119
K. R. Kingsbury, February 8, Richmond, crude	84,683
Exports	
Cliona (Br.), February 4, Japan, fuel	55,910
Kio Maru (Jap.), February 4, China, crude	70,617
El Lobo (Br.), February 4, Balboa, fuel	45,397
Java Arrow, February 6, China, refined	85,947
San Tiburcio (Br.), February 7, England, refined	65,288
San Fernando (Br.), February 8, Tampico, crude	118,007
From Ventura	
Frank G. Drum, February 6, Avon, crude	74,111
From Port San Luis	
La Placentia, February 4, Oleum, crude	78,955
Oleum, February 4, Eureka, fuel	31,137
From San Francisco	
J. A. Moffett, February 2, Seattle, fuel	63,788
Col. E. L. Drake, February 2, Astoria, refined	31,475
Richmond, February 4, Seattle, fuel	62,177
Swiftwind, February 6, Fall River, tops	78,930
Alaska Standard, February 7, Seattle, refined	10,473

"Campaign Promises"

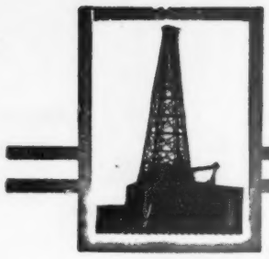
Over 31 years ago The S. M. Jones Company set out to make the best Sucker Rod and promised itself that it would never permit the quality of the product to fall below that high standard. This wasn't a "Campaign Promise." It has been made good each succeeding year and today Jones leads the world in quality and production.

Jones forged-end Sucker Rods

are the strongest, most dependable Sucker Rods made—exhaustive, unbiased, tests prove it conclusively.

Read our book—"The Inside Story"—get all the facts—a copy is yours for the asking.

THE S. M. JONES COMPANY
Toledo, Ohio
Mid-Continent Office: 601 Wright Bldg., Tulsa, Okla.



North-Central Texas Field

By Staff Correspondent

Northern Young and southern Archer Counties scene of considerable drilling activity. Archer County recorded 17 oil producers with semi-completion reported flowing 1,000 bbls. Pay level in South Vernon Pool extended quarter of mile by 100-bbl. well. Production shows increase.

FORT WORTH, Tex., Feb. 16.—Another advance in the price of crude oil, the third in three weeks' time, and a continuation of the intense activity in north Young and south Archer Counties are the high points of interest for the past week in the North Central Texas oil territory. The week has also been marked by an increase in wildcat activity.

Production for the week showed a daily gain of 1,780 bbls. over the daily average of the week previous. Total daily production for this week is 130,980 bbls. as compared with a daily average last week of 129,200 bbls. The principal gains were in the so-called wildcat districts, which showed a gain over last week's production of 2,385 bbls. Eastland County gained 120 bbls. and the Iowa Park district registered a gain of 310 bbls. Burkburnett lost 120 bbls., Electra lost 385 bbls., and Stephens County suffered a decline of 530 bbls.

Completions this week numbered 43, a loss of 24 from last week's completions when there was a total of 67. New production this week amounted to 5,080 bbls. as against 6,390 bbls. last week. Of this week's completions 25 were producers and 18 were dry holes. There were no gas wells reported this week.

Archer County Active

Archer County had another very active week, recording a total of 19 completions with new production amounting to 4,250 bbls. and the bringing in of several large wells that are not yet listed as completions. The new completions in Archer had an average production per well of approximately 22 bbls. The county also had a very good record in that only two of the 19 completions were dry holes, 17 being oil producers.

Among the big wells brought in in Archer County this week that are not yet completed is the No. 1 Kunkel of the Gulf Production Co. in the Carey Pool. The Gulf well hit the pay at 1,137 feet and was drilled in a total of 20 feet. According to late reports from the field it is flowing by heads and making close to 1,000 bbls. daily. It is just to the north of the Kunkel well of Harvey and others which was one of last week's sensations in south Archer County.

Another big producer is also on the Kunkel lease. It is the No. 1 Kunkel, of Shaw and others which was drilled 27 feet into the sand topped at 1,135 feet. The well is estimated to have a daily output of about 585 barrels. The Petroleum Producers Co. has a large producer on the Hausler tract. It is No. 8 Hausler which topped the sand at 1,115 feet and has been drilled to a total depth of 1,142 feet. It is estimated to be making 1,200 bbls. while in process of being completed. No. 9 Hausler of the same operator is another late producer in south Archer. It is reported to be good for about 250 bbls. though not completed. This well has about 32 feet of sand which was topped at 1,108 feet.

Other Near Completions

Among other near completions in the Archer County districts are: Wollett and others' No. 5 Griffin, estimated to be making 285 bbls. from 12 feet of pay topped at 1,924 feet; Murchison and others' No. 16 Griffin, estimated to be making 175 bbls.; The Texas Co.'s No. 1 Mineral fee, estimated to be good for 150 bbls. from 6 feet of sand while being standardized to put on the pump; Roxana Petroleum Corp.'s No. 6 Kunkel, making 200 bbls. from sand at 1,142 to 1,162 feet; Phillips and others' No. 6 Wilson in the north half of the county, swabbing 200 bbls. from 2 feet of sand topped at 1,519 feet; Murchison and others' No. 7-C Harmel, estimated to be good for 75 bbls. at a total depth of 1,280 feet; Shamrock Oil Co.'s No. 6-C Richardson, good for 200 bbls. at 1,296 feet and the Texhoma Oil & Refining Co.'s No. 1 Phillips estimated at 60 bbls. at a total depth of 1,179 feet. In this same district, Maer and others' No. 3 Monohan is now bailing a good looking sand with a good showing of oil at 1,313 to 1,321 feet.

Wichita County

Wichita County reported eight completions for the week, four producers and four dry holes. New production amounted to only 175 bbls. There is one near completion in the county, No. 10 Maer of the Magnolia Petroleum Co., which is swabbing at the rate of 200 bbls. in 12 hours. The well has only 3 feet of pay, the bottom of the hole being at 1,762 feet.

Coung County

There were six completions in Young County, only two of which were oil wells, four being dry holes. Total new production from the county amounted to 420 bbls. Activity in this county is confined very largely to the extreme northern portions, adjoining Archer County on the south. There are two wells nearing completion in this section of Young County. They are No. 2 Schlegel of Murchison and others, estimated to be making 150 bbls. from sand at 1,201 to 1,206 feet and the No. 1 Gambrell of Gwynn and others, reported good for about 90 bbls. at a total depth of 1,215 feet.

Eastland County

Eastland County had two completions, one producer making 10 bbls. and one dry hole. The wildcat reported eight completions, seven of which were listed as dry holes or abandoned tests.

South Vernon Field

There are two new wells showing for production in the South Vernon Field of Wilbarger County. One is Bridwell and others' No. 6 Stephens which is reported good for 100 bbls. from the sand at 2,265 to 2,283 feet. The other is the Continental (Mutual) Oil Co.'s No. 1 Zipperle, which is showing for a nice producer in sand at 1,303 to 1,313 feet. This well is of considerable importance in that it promises to extend the 1,300-foot pay level approximately a quarter of a mile to the east of any other production at that horizon.

In Wheeler County, Texas Panhandle, Whittington and others' No. 2 Williams & Laycock has been drilled 12 feet deeper to a total depth of 2,202 feet and the output of the well has increased to about 100 bbls. daily. These operators have made the location for their Nos. 3 and 4 on the same lease.

Reports from Breckenridge are to the effect that the Phillips Petroleum Co. has purchased the holdings and property of the National Products Co., a California concern. The property consisted of two gasoline plants located on the outskirts of the city of Breckenridge. Phillips Petroleum recently purchased the properties of the Landreth Production Co. and those of the Hope Engineering Corp. Most of the Landreth properties were located in the Ibex Field of Shackelford County to the southwst of Breckenridge. The Hope Engineering properties were also in the Breckenridge district.

Moore & Snebold, Fort Worth operators, have resumed operations on their No. 1 Stuart Brothers, 10 miles north of Strawn, in Palo Pinto County. Delay was caused by the necessity for drilling a water well. The No. 1 Stuart is now drilling around 500 feet. It is located in the SE Cor. of the SW quarter of Section 54, Block 3.

Wichita County Completions

Burkland and others' No. 1 Burnett, 10 bbls. at 828 feet; Humble Oil & Refining Co.'s No. 4 Burnett, dry at 1,615 feet; Magnolia Petroleum Co.'s No. 8 McMan Waggoner, dry at 1,940 feet; same company's No. 41 Rio Bravo, 15 bbls. at 1,943 feet; same company's No. 8-A Waggoner, dry at 2,190 feet; same company's No. 2 Watkins, 100 bbls. at 1,767 feet; Ross Oil Co.'s No. 2 Waller, dry at 770 feet; Texhoma Oil & Refining Co.'s No. 7 Burnett, 50 bbls. at 1,819 feet.

Archer County Completions

Phillips and others' No. 5 Wilson, 285 bbls. at 1,519 feet; Oil Investment Co.'s No. 5 fee, 75 bbls. at 1,107 feet; Sinnet Oil Co.'s No. 5 Parrish, 80 bbls. at 1,302 feet; Wolfe and others' No. 1 Chilson, 40 bbls. at 1,808 feet; Christie Brothers' No. 1 Campbell, 420 bbls. at 1,297 feet; Harvey and others' No. 1 Kunkel, 1,025 bbls. at 1,160 feet; Maer and others' No. 2 Monohan, 60 bbls. at 1,316 feet; Maxwell and others' No. 1 Harolson, dry at 1,602 feet; Murchison and others' No. 12 Griffin, 30 bbls. at 1,307 feet; same company's No. 13 Griffin, 175 bbls. at 1,311 feet; same company's No. 14 Griffin, 100 bbls. at 1,301 feet; same company's No. 7-B Harmel, 20 bbls. at 1,272 feet; Muse and others' No. 1 Brazina, dry at 1,511 feet; Mutual Oil Co.'s No. 4 Harmel, 10 bbls. at 1,278 feet; Ray and others' No. 13 Hausler, 175 bbls. at 1,149 feet; Roxana Petroleum Corp.'s No. 4 Kunkel, 250 bbls. at 1,160 feet; Shaw and others' No. 3 Hausler, 350 bbls. at 1,149 feet; same company's No. 1-A Hayter, 90 bbls. at 1,317 feet; White and others' No. 1 Kunkel, 1,045 bbls. at 1,156 feet.

Young County Completions

Humble Oil & Refining Co.'s No. 2 Campbell, dry at 1,081 feet; McGee and others' No. 1 Boyd, dry at 1,305 feet; Muse and others' No. 1 Campbell, dry at 1,114 feet; The Texas Co.'s No. 1 Gambrell, 175 bbls. at 1,219 feet; Texhoma Oil & Refining Co.'s No. 1 Gambrell, 265 bbls. at 1,224 feet; Verschoyle and others' No. 1 Wainscott, dry at 1,514 feet.

Eastland County Completions

McMeans and others' No. 1 Storm, dry at 1,747 feet; Rosenfield and others' No. 1 Burnett, 10 bbls. at 3,225 feet.

Wildcats—Completions

Wilbarger County—McCamey and others' No. 2 Richardson, 225 bbls. at 1,330 feet; Wood and others' No. 1 Boyce, dry at 2,135 feet.

Baylor County.—Skinner and others' No. 1 Martin, dry at 1,655 feet; Texhoma Oil & Refining Co.'s No. 1 Perkwood, dry at 1,504 feet.

Wise County.—Michigan Oil & Gas Co.'s No. 1 Young, dry at 2,500 feet.

Brown County.—Anderson and others' No. 1 Wheeler, dry at 2,803 feet.

Reagan County.—Transcontinental Oil Co.'s No. 1 University, dry at 3,615 feet.

Upton County.—Virginia Texas Petroleum Co.'s No. 1 University, dry at 3,758 feet.

Wichita County—Drilling

Couch and others' No. 1 Smith at 1,253 feet; Hunter and others' No. 2 Collen at 200 feet; Magnolia Petroleum Co.'s No. 112 Reilly, at 1,294 feet; same company's No. 113 Reilly, at 1,060 feet.

Archer County—Drilling

Carter and others' No. 19-E White, at

(Continued on Page 46)

Rocky Mountain Area

By Frank B. Taylor

CASPER, Wyo., Feb. 14.—The Ohio Oil has made an important strike that is expected to start a drilling campaign, in the Oregon Basin, Park County, about 15 miles south of Cody. At 2,400 feet the Ohio Oil Co.'s No. 2 on the Sonnere permit struck what is thought to be the Dakota sand and opened a flow estimated at 60,000,000 feet of gas. This well is on Section 8-51-100.

The Oregon Basin Dome is one of the largest structures in the Big Horn Basin, its structural indications on the surface make it even larger than the Salt Creek Field, and for many years this structure has been looked upon as a probable field. The area has been tied up in a legal tangle for some time past due to the old placer claims emanating from the early days of the foreign oil companies that pioneered this region for petroleum, but these tangles have been straightened out and the area is being tested.

The Ohio's strike of gas proves that the main structure is a gas field of large size. Whether the same sand contains oil or not is still a question and the same applies to five sands lying below the present horizon. The Franco Wyoming Oil Co. drilled one deep test on the east side of the field in 1916 that also came in a big gasser and there are several shallow wells which found a black oil about 800 feet deep.

The Ohio can utilize the gas in the lines of the Rocky Mountain Gas Co. that runs from Byron to Montana and supplies Billings and other cities along the route and a line will probably be laid this spring from the Byron Field to Cody, a distance of about 40 miles, to connect with the new well. The well is to be drilled to the underlying sands as soon as the gas is under control.

New Test in Utah

The Midwest Refining Co. is starting an interesting test in Utah on the Cane structure ,about 10 miles west of the town of Moab and about 40 miles from the railroad. This location is on land that has never been surveyed, so there is no section, township or range numbers to go by. The Grand River affords the best mode of transport for the region, which is desolate and an arid desert plain broken by buttes and arroyos. The Midwest is boating in the drilling equipment down the Grand River which is a tedious undertaking. The engineers and geologists who first located the structure also had to overcome many obstacles in exploring the country.

Chief Geologist Carroll G. Wegeman, Petroleum Engineer E. L. Estabrook and Field Superintendent James Stewart, son of Col. Robert W. Stewart, were among the first to survey the new structure. These three started by canoe last December, for the area and in running some rapids, the canoe shipped a wave, drenching the party. The men had to sleep that night out in the open with the thermometer below zero and under wet blan-

(Continued on Page 105)

COOPER GAS ENGINES

"Proof of The Pudding"

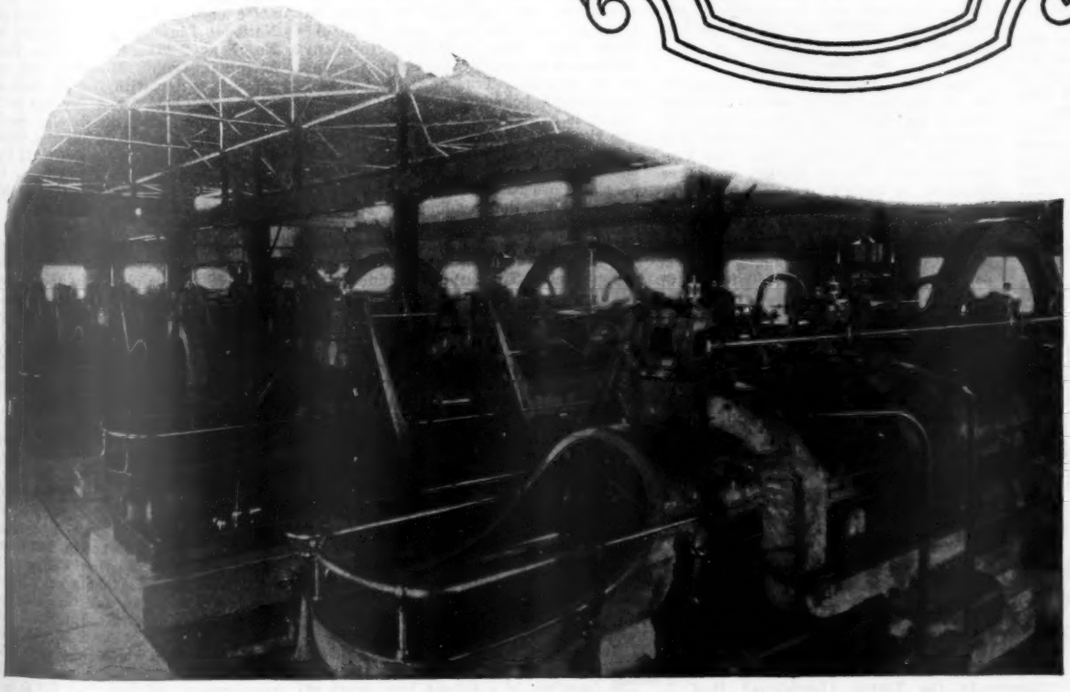
Would you believe us if we told you that Cooper four-cycle gas engines are operating on less fuel, require fewer repairs and give more continuous operation than any other gas engines built today? Are you convinced when operators from every oil and gas field in the country say they would rather operate Coopers?

Engine builders and operators, not meaning to exaggerate, but influenced by individual enthusiasm may easily misstate the real facts.

For that reason we are always reluctant to make such statements when we can convey the same truths, much more convincingly, by telling you that such companies as the United Fuel Gas Co. in West Virginia, now operating 50,000 B.H.P. in Cooper engines, continue to install Coopers.

THE C. & G. COOPER CO.
Mt. Vernon, Ohio
504 Kennedy Bldg., Tulsa, Okla.

Since 1833
Engineers and Builders



The first photograph of UNITED FUEL GAS CO.'S NEW LEWIS COMPRESSOR STATION

Ten 485 B.H.P. Cooper Gas Engines, operating as twins, drive Cooper Compressors.

Gulf Coast Oil Operations

By P. L. McGreal

Vacuum Oil Co. completes another producer in Lockport district, near Lake Charles, Louisiana. Southwest fields reach new high record for crude production. Use of torsional balance and seismograph in locating salt domes increasing. Crude price advance stimulates leasing activity.

HOUSTON, Tex., Feb. 16.—The Lockport district near Lake Charles, Calcasieu Parish, south Louisiana, which was opened last September by the Vacuum Oil Co. with a flowing well of 3,000 bbls. at 3,875 feet, came into the limelight again last week, when the Vacuum Oil Co.'s No. 1 Farquhar, southwest from the discovery well, came in while the crew was fishing for the bailer, flowing 250 bbls., 7 per cent water. Depth of the hole, which is unfinished, is around 2,700 feet. The company abandoned No. 1 Bordages, south and east of the discovery well, in salt water at 4,700 feet. The wide variance in the depths would indicate the territory is badly broken and spotted. The Vacuum company is rigging No. 2 Miller. The Marland Oil & Refining Co.'s No. 1 Sand company, about 1 mile south of the discovery well, is drilling below 2,240 feet.

A total of 23 wells were completed in the Coastal pools during the week, many of these either having been drilled deeper or worked over. The new production developed 1,785 bbls. The dry holes number nine and the salt water wells three. Ten were being bailed at the close of the week.

In the southwest fields, five wells were completed, three being in the Luling Field and two in Jim Hogg County. The new output in the first named field was 600 bbls. and in Jim Hogg County, 4,000 bbls.

Estimated Gross Production

The estimated daily average gross production in the Gulf Coast pools for the week ending February 14, is placed at 71,140 bbls. compared with 71,990 bbls. last week, or a decrease of 850 bbls.

The estimate for the southwest fields for the same period is placed at 46,930 bbls., the highest in the history of that division. This compares with 44,205 bbls. last week, or an increase of 2,725 bbls. Most of the increase is credited to the Jim Hogg County Field.

The following table gives the estimated daily average for each district:

District—	Gross Bbls.
Batson	1,565
Blue Ridge	610
Barber Hill	125
Big Creek	525
Dayton	60
Damon Mound	1,205
Edgerly (La.)	450
Goose Creek	8,875
Humble	5,400
Hull	15,500
Jennings (La.)	625
Markham	105
Orange	9,400
Pierce Junction	1,050
Spindletop	950
Saratoga	1,500
Sour Lake	3,820
Vinton (La.)	5,695
Welsh-Anse La Bute (La.)	75
West Columbia	12,350
South Liberty	350
Lockport (La.)	700
Miscellaneous	305
Total	71,140
Southwest Fields—	
Luling	28,600
Laredo	4,150
Somerset	2,500
Callihan	350
Rockdale-Minerva	465
Jim Hogg County	10,775
Total	46,930
Grand total for week	118,070
Grand total last week	116,195
Increase	1,875

Late Completions

None of the wells completed during the week in the coastal division was big, the best being the Republic Production-Houston Oil Co.'s joint No. 100 Dolbear in the Hull Pool, flowing 1,000 bbls., 17 per cent water, at 2,300 feet. The Texas-Vacuum Oil Co.'s joint No. 4 Hannah there is flowing 220 bbls. by heads at 3,100 feet. The Mecom Oil Co.'s No. 6 Mecom is flowing 300 bbls. at 4,200 feet and No. 7 is a salt water well at 2,970 feet.

Goose Creek Pool

In the Goose Creek Pool, the Gulf Production Co.'s No. 10 Tabb, a workover, is pumping 25 bbls. at 2,600 feet. No. 15-A Tabb is bailing at 2,625 feet. The Copeland Oil Co.'s No. 5 Bryan will make a pumper at 3,230 feet. Two wells were abandoned. The Humble Oil & Refining Co. quit No. 59 Smith at 4,725 feet and is bailing No. 60 Smith at 4,200 feet. The Humble Oil & Refining Co. deserted No. 6 Tabb at 2,590 feet. The Sun Oil Co.'s No. 5 Wright, a workover, is bailing at 2,525 feet and the Gulf Coast Oil Co.'s No. 31 Galliard is doing the same at 2,895 feet.

Orange Pool

In the Orange Pool, the Gulf Production Co.'s No. 8 Peveto and 17 Lee Hager bailed dry and are being drilled deeper. The Rycade Petroleum Co.'s No. 14-E State land is bailing at 3,479 feet. The Humble Oil & Refining Co.'s No. 11 Winifree, completed 10 days ago as a 3,000-bbl. well, is now flowing 1,200 bbls. with chokers on. The gas pressure increased during the week and the output of the wel lran up to 3,500 bbls. for a day, then dropped off.

In Other Pools

The Hyde Production Co. abandoned No. 6 McGregor in the West Columbia Pool at 905 feet in salt. The Texas Co. abandoned No. 1 Fisher at Barber Hill at 1,012 feet in gumbo. The Gulf Production Co.'s No. 11 Taylor, at Pierce Junction, is bailing at 3,750 feet after deepening.

The Rycade Petroleum Co.'s No. 1 Gray in the old Markham Pool in Matagorda County, started pumping 60 bbls. per day at 3,275 feet with 40 feet of 3-inch screen set, but declined to 15 bbls. at the end of the week. No. 2 Gray is drilling below 2,700 feet.

In the Batson Pool, the Ada Belle Oil Co.'s No. 82 Condon is a salt water hole at 1,175 feet. Anderson & Munson worked over No. 1 Hodges into a 60-bbl. producer at 2,960 feet. It is a deep hole for that pool. The East Batson Oil Co.'s No. 2 Texas is pumping 15 bbls. at 1,200 feet and the Acorn Oil Co.'s No. 51 Paraffin, 5 bbls. at 405 feet.

In the Saratoga Pool, Paggi Brothers Oil Co.'s No. 6 Lewis is a dry gas well at 1,020 feet.

In the original Spindletop Pool, which has been producing for 24 years, the Williams Oil Co.'s No. 1 Gladys will pump at 1,150 feet. The McKinney Oil Co.'s No. 1 Gladys is bailing at 850 feet as is the Stella Oil Co.'s No. 6 McFadden at 960 feet.

In the Vinton (Louisiana) Pool, 7 miles east of Orange, the Gulf Refining Co. of Louisiana abandoned No. 60 G. N. G. at 2,250 feet. It is bailing Nos. 27 Vincent and 23 Star at 2,140 feet and 2,725 feet respectively. The Vinton Petroleum Co.'s No. 1 Gray is bailing at 2,725 feet.

The Gulf Production Co. abandoned No. 2 Cloud, off the new Boling Dome in Wharton County, at 1,800 feet.

Effect of Advanced Prices

The Humble Oil & Refining Co. announced an advanced of 25 cents for Gulf Coast crude at noon Thursday, which was followed later in the day by other pipe lines. Grade A is now $2 and B is $1.75. These quotations are the highest since April, 1924. The Texas Co. makes no distinction in the grades, paying $2 per bbl. regardless of the other purchasers.

Leasing is more active than it has been for several years, especially what has come to be known as "optional leases," or contracts whereby the major companies are given the privilege of testing the prospect with either the seismograph or torsional balance instruments, or using both, to determine if there is a saline mass, or salt dome in the vicinity. The companies pay from 10 to 15 cents per acre for this privilege. If rock salt is determined the companies take over the lease at an agreed bonus, the same as has always been the practice since the days of Oil Creek. If the instruments say "no salt," figuratively speaking, the companies relinquish the option to the land owner.

Some idea of the amount of optional leasing being done at present may be had from the fact that the major companies are spending approximately $250,000 per month, or $3,000,000 per year. The optional leases really cost more than an average of 10 cents per acre for the reason that this figure does not include the cost of abstracts, examination of title and other incidentals. These optional leases cover tracts ranging from 2,500 to 6,000 acres. It is necessary to block up in big tracts before the instruments are used. It is not known where the dome may be located, or its area, if it is a saline uplift. Some of the present known domes cover an extensive area, as has been developed by tests drilled in the past. Stratton Ridge, southwest of Angleton, in Brazoria County, for instance, is more than 5 miles across from the northeast to the southwest. Another dome north of the town of Dayton, in Liberty County, covers an even greater area, hence the need for blocking up large tracts before preliminary tests are made with the instruments.

Scientific Instruments

Opinion is divided among those connected with the industry regarding the use of the seismograph and torsional balance instruments, designed to locate salt domes with scientific exactness. They have been in use in the coastal plains region of Texas and Louisiana for about a year, as has been mentioned in previous reviews. They were introduced by the Roxana and Rycade corporations,

(Continued on Page 92)

News of Mexican Fields

By George Blardone

TAMPICO, Mex., Feb. 13.—The surprise well of the past week in Mexican fields was finished by La Corona Petroleum Co., in the Hick's lease, Garruche Corcovado, (as reported by telegraph) at a depth of 2,140 feet, rated good for 7,000 bbls. This well, after so many failures in the Corcovado, was heartening in the extreme. True, it is located near the western boundary of the Corcovado, but it is a well and good one both from the viewpoint of production and of depth. It is the company's No. 3, and, officially, is located in Lot 11, Corcovado. The Corona Co.'s No. 4, Lot 7 there, was an earlier completion heading say 250 bbls. at 2,568 feet, too deep for any great hopes of its proving a producer for any length of time, unless, indeed, previous history belies itself. The latter was finished in the Tamasopa limestone. North of the good producer noted, Corcovado Petroleum Co.'s No. 1, Lot 6, drilled into a tiny sop of salt water at 2,500 feet, presumably in the San Felipe, and it is being plugged and abandoned.

Of the 13 wells finished last week five were in the producing class, all in the northern fields, save one, the total new production secured being only 7,900 bbls., one well, the No. 3 above noted, being credited with the 7,000 bbls. Over in the Marland Field, Cia. Petroleum Franco Espanola called its No. 19 Limon a completion at 2,041 feet, rated good for 250 bbls. National Oil Co., drilling in the company's old Chijoles lease, on the south-by-east edge of the old Panuco Field, has a 100-bbl. well in its No. 12 at 2,430 feet.

In the south fields, Mexican Sinclair Petroleum Corp. finished its No. 14, Lot 226 Amatlan, at a sub-sea level depth of 1,746 feet, rated good for about 300 bbls.

Failures Reported

The failures during the week follow: Mexican Sinclair Petroleum Corp.'s No. 84, Lot 3 Cacalilao, finished in salt water at 2,287 feet. Transcontinental Petroleum Co.'s No. 149, Lot 5 Cacalilao, is a dry hole at 1,900 feet. La Corona Petroleum Co. quit a small fluid well in its No. 4 Los Cues, well south of Topila, in the San Felipe at 3,054 feet; and up in Chila, south of the station of that name on the San Luis division of the National Lines, it has a failure in its No. 1 at 2,793 feet. In the Tortuga, north of Chila, Morrison and others called it a day with No. 12 there, abandoning the hole for a dry one at 2,030 feet, having failed to develop the limestone. In the Ebano district, Mexican Petroleum Co. abandoned No. 12 Chapacao for a duster at 2,500 feet. In El Barco, Mexican Gulf Oil Co. did the same with its No. 24 at 2,363 feet.

January Completions

The month of January saw some 53 wells completed in Mexican fields, of which 18 can be placed in the production column, the remainder being failures. The new production secured (potential head) was 87,739 bbls., with 50,000 bbls. being credited to one well in the south fields. The remaining flush production, of any moment, belongs to the northern fields.

Field Operations

In the Cacalilao sector of the northern fields drilling operations at the end of the week are epitomized as follows: La Corona Petroleum Co., in Lot 4; No. 160 cemented 8-inch casing in the San Felipe at 1,200 feet; No. 162 is drilling in limestone at 1,890 feet; No. 163 cemented 8-inch casing in the San Felipe at 1,180 feet; No. 165 is in shale at 2,300 feet; No. 166 is spudded, and this also applies to No. 151 in Lot. 1. International Petroleum Co., in Lot 5; Nos. 104 and 124 are both in the white lime at 2,155 and 2,165 feet respectively; No. 109 is in gray shale at 305 feet; No. 127 is in gray lime at 1,971 feet; No. 133 cemented 8-inch casing in San Felipe at 1,180 feet; No. 137 is drilling in white lime at 2,140 feet; No. 138 cemented 8-inch casing in the San Felipe at 1,180 feet; No. 142 is drilling in white lime at 2,245 feet; No. 145 is in gray lime at 1,820 feet; Nos.

(Continued on Page 101)

FOR CLASSY SERVICE	
TONGS	
TUBING CATCHERS	
ELEVATORS	
FOR ALL PURPOSES	
It must be DUNN	

DUNN TOOLAGRAM

ORIGINAL
PRACTICAL
ECONOMICAL

The New DUNN Tubing Tong

(Light Balanced Dunn-"SmithTONG" Type)

Reproduction from photograph showing 1¼" tong in locked position on pipe, holding 200 pound man, without strain, or danger of slipping or opening, and without injury to either tong or tubing.

A new Dunn Tubing Tong light and perfectly balanced, which embodies all the outstanding features of speed, strength, safety and positive grip that have made all Dunn Tools recognized leaders.

Automatically locks on the tubing and cannot fall off while being passed, but can quickly and easily be removed by the operator. Two jaws, each a complete half-circle; one overhanging, which interlocks the other in surrounding the tubing, and a strong tension member that holds the tong in position as tight as a vise. When the tong in position as tight as a vise. When removed from tubing, this tong automatically locks in open position. A large range of take-up insures a firm, positive grip, maximum speed in operation and long, satisfactory service.

Ready Now— get your orders in early

Can be snapped on and off the pipe as quick as a flash with one or both hands, and *positively* will not mash or otherwise damage tubing.

Dunn Mfg. Co.
Oxnard, California

1308

Another Knockout
(it hadta' be Dunn)

NORTH CENTRAL TEXAS

(Continued from Page 42)

1,430 feet; Franklin and others' No. 3-B Parrish at 340 feet; Hobbs and others' No. 5 Wilson, at 1,305 feet; Jetter and others' No. 3 White, at 1,100 feet; Knox and others' No. 1 Wilson at 1,168 feet; Magnolia Petroleum Co.'s No. 12 Langford at 875 feet; Mid-Kansas Oil & Gas Co.'s No. 1 Wilson, at 1,602 feet; Stidham and others' No. 15 White at 1,575 feet; Prairie Oil & Gas Co.'s No. 31-D Wilson at 1,200 feet; Shappell and others' No. 16 Jackson at 500 feet; Texhoma Oil & Refining Co.'s No. 1 Chilson at 837 feet; Dee Brothers' No. 1 Sadau, at 240 feet; Eureka Drilling Co.'s No. 1 Parkey at 1,230 feet; Gwynn and others' No. 1 Pastusek at 1,410 feet; Hobbs and others' No. 3 Lane at 670 feet; Magnolia Petroleum Co.'s No. 1 Lauster at 1,340 feet; McNamara Brothers' No. 1 Justice, at 1,715 feet; Mitcham and others' No. 1 Wilson at 210 feet; Bridwell and others' No. 1 Boren, at 870 feet; Camp Oil & Gas Co.'s No. 1 Holosek is spudding; Clark and others' No. 1 Rogers, drilling at 1,410 feet; Cook and others' No. 1 Campbell, spudding; Crosslin and others' No. 1 Garvey, drilling at 925 feet; Daniels and others' No. 2 Stamfli at 300 feet.

Grisham and others' No. 1 Hayter at 860 feet; Gwynne and others' No. 3 Rogers at 430 feet; Hardesty and others' No. 1 Kunkel at 860 feet; Harris and others' No. 2 Stamfli at 1,190 feet; Humble Oil & Refining Co.'s No. 2 Hausler at 840 feet; same company's No. 1 Hayter at 1,115 feet; same company's No. 2 Hayter at 1,240 feet; same company's No. 4 Hayter, at 540 feet; same company's No. 5 Hayter is spudding; same company's No. 2 Stamfli is drilling at 1,357 feet; Maer and others' No. 3 Monohan at 990 feet; same company's No. 1 Monohan at 640 feet; same company's No. 2 Monohan is spudding; Magnolia Petroleum Co.'s No. 2 Rogers is drilling at 570 feet; same company's No. 1 Stamfli at 1,320 feet; McCracken and others' No. 1 Martin, spudding; Murchison and others' No. 15 Griffin, drilling on sand at 1,293 feet; No. 16 Griffin at 1,020 feet; No. 3-A Harmel at 1,189 feet; No. 8-B Harmel, at 1,156 feet; No. 9-B Harmel at 1,134 feet; No. 1 Hayter, at 350 feet; Mutual Oil Co.'s No. 6 Harmel, at 1,210 feet; Petroleum Production Co.'s No. 8 Hausler at 1,112 feet; No. 9 Hausler at 940 feet; No. 10 Hausler at 450 feet; No. 11 Hausler at 200 feet.

Roxana Petroleum Corp.'s No. 3 Kunkel is cementing casing at 1,130 feet; same company's No. 5 Kunkel is preparing to shoot at 1,173 feet; No. 6 Kunkel is setting casing at 1,142 feet; Shamrock Oil Co.'s No. 20 Goldsmith, drilling a sand at 1,328 feet; Shaw and others' No. 5 Hausler, drilling at 1,090 feet; No. 6 Hausler at 1,105 feet; No. 7 Hausler, spudding; Sun Oil Co.'s No. 2 Kunkel, is drilling at 350 feet; No. 3 Kunkel at 500 feet; Swastika Oil Co.'s No. 4 Neal at 560 feet; The Texas Co.'s No. 1 Mineral fee is on sand at 1,368 feet; same company's No. 9-B Ragle is drilling at 630 feet; United Central Oil Co.'s No. 1 Rogers, running casing at 1,365 feet; Willis and others' No. 1 Greenway, drilling at 250 feet; Young and others' No. 1 Lassater, drilling at 1,290 feet.

Young County—Drilling

Andrade and others' No. 1 Gose at 520 feet; Brian and others' No. 1 Vernon is running casing at 1,050 feet; Burton and others' No. 1 Hankins at 1,085 feet; Dunn & Co.'s No. 1 Craig at 2,360 feet; Gilliland and others' No. 1 Wilde at 640 feet; Hinson and others' No. 1 Ribble at 2,150 feet; Humble Oil & Refining Co.'s No. 1 Schlegel at 530 feet; Kentucky Oil Co.'s No. 1 Bullock at 860 feet; Knight and others' No. 1 Street at 350 feet; same company's No. 1 Bellamy is spudding; Krog and others' No. 1 Boone, drilling at 1,050 feet; Murchison and others' No. 5 Gambrell at 650 feet; No. 6 Gambrell at 300 feet; Nos. 7, 8 and 9 Gambrell at 200 feet; No. 1 Weichman at 540 feet; O'Neall and others 'No. 1 Bullock is fishing at 1,120 feet; Reed and others' No. 1 Foster, drilling at 1,030 feet; Simms Oil Co.'s No. 5 Carpenter, preparing to set casing at 1,022 feet; same company's No. 6 Carpenter, drilling at 640 feet; Stone and others' No. 1 Durmam at 285 feet; Texhoma Oil & Refining Co.'s No. 2 Gambrell at 560 feet; same company's No. 3 Gambrell at 425 feet; Wilson and others' No. 1 Campbell at 1,108 feet.

Stephens County—Drilling

Critten and others' No. 4 Cobb is fishing at 3,323 feet; Illinda and others' No. 4-A Walker & Caldwell, drilling at 1,650 feet; Interstate Consolidated Oil Co.'s No. 1 Lane at 1,675 feet; Mid-Kansas Oil & Gas Co.'s No. 15 Hill, fishing at 2,365 feet; same company's No. 11 Tullos, account 1, is drilling at 3,740 feet; Prairie Oil & Gas Co.'s No. 15 Atkins, cleaning out at 3,263 feet; Republic Production Co.'s No. 2 Knox, drilling at 3,560 feet; Snowden and others' No. 5 Higginbotham at 3,175 feet; Texas Consolidated Oil Co.'s No. 6 Martin, hole caving at 3,006 feet; Walker and others' No. 4 First National Bank is drilling at 1,506 feet; Welsh and others' No. 3 Brown at 320 feet; Adamson and others' No. 2 Bradford at 1,675 feet; Head and others' No. 1 Post is cleaning out at 2,255 feet; Hughes and others' No. 4 Gandy, drilling at 1,755 feet; Knox and others' No. 1 Flournoy, fishing at 3,840 feet; Magnolia Petroleum Co.'s No. 7 Brown at 3,220 feet; No. 8 Brown, drilling up a bailer at 3,175 feet; No. 5 Walker, drilling at 840 feet; Simms Oil Co.'s No. 6-A Jackson is setting casing at 2,874 feet; Sindorf Brothers' No. 3 Sorgee is drilling at 1,600 feet; Sun Oil Co.'s No. 6 Stoke at 3,655 feet; Texas Pacific Coal & Oil Co.'s No. 2 Hand, account 2, underreaming; Thompson and others' No. 2 Williams, cleaning out at 2,175 feet.

Eastland County—Drilling

Brothers and others' No. 1 Norton at 1,725 feet; Eby and others' No. 6 Miller, fishing at 1,575 feet; Magnolia Petroleum Co.'s No. 2 Gulf-Carruth, cleaning out at 2,875 feet; same company's No. 8 Harris, drilling at 750 feet; Panhandle Oil & Refining Co.'s No. 1 Hightower at 3,215 feet; Pittman and others' No. 2 Pettit at 600 feet; Teatsworth and others' No. 3 Scott at 1,075 feet; Burkett and others' No. 1 Stanton is setting casing at 3,170 feet; Eastland Oil Co.'s No. 1 Hazel, drilling at 2,380 feet; Hummell and others' No. 1 Lamb at 1,320 feet; Root and others' No. 1 Hazel, underreaming; Tidal Osage Oil Co.'s No. 1 Owens, drilling at 3,000 feet; Weaver Oil Corp.'s No. 1 Hatton, at 1,930 feet.

PRODUCTION REPORT

Week Ending February 12, 1925

Burkburnett		
Barkley & Meadows	530	
Humble Oil & Ref. Co.	460	
Gulf Production Co.	710	
Magnolia Petroleum Co.	2,715	
Sun Oil Co.	170	
Panhandle Refining Co.	270	
Prairie Oil & Gas Co.	10	
Sinclair Oil & Gas Co.	75	
The Texas Co.	520	
Texhoma Oil & Ref. Co.	390	
Miscellaneous	8,830	
Total		14,680
Electra		
Empire Gas & Fuel Co.	1,010	
Humble Oil & Ref. Co.	130	
Gulf Production Co.	945	
Magnolia Petroleum Co.	4,080	
Panhandle Refining Co.	60	
The Texas Co.	3,705	
Texhoma Oil & Ref. Co.	1,685	
Miscellaneous	5,500	
Total		17,115
Iowa Park, Etc.		
Gulf Production Co.	35	
Humble Oil & Ref. Co.	10	
Magnolia Petroleum Co.	455	
Panhandle Refining Co.	50	
Texhoma Oil & Ref. Co.	30	
Miscellaneous	3,170	
Archer County—		
Empire Gas & Fuel Co.	610	
Sun Oil Co.	330	
Gulf Production Co.	3,055	
Humble Oil & Ref. Co.	320	
Magnolia Petroleum Co.	715	
Panhandle Oil & Ref. Co.	240	
Prairie Oil & Gas Co.	1,025	
The Texas Co.	2,855	
Texhoma Oil & Ref. Co.	2,635	
Miscellaneous	25,645	
Petrolia—		
Gulf Production Co.	25	
Magnolia Petroleum Co.	20	
The Texas Co.	55	
Miscellaneous	240	
Total		41,520
Stephens County		
Empire Gas & Fuel Co.	85	
Gulf Production Co.	1,255	
Humble Oil & Ref. Co.	890	
Magnolia Petroleum Co.	690	
Mid-Kansas Oil & Gas Co.	1,870	
Prairie Oil & Gas Co.	880	
Sinclair Oil Co.	105	
The Sun Co.	240	
The Texas Co.	1,630	
Texas Pacific Coal & Oil Co.	960	
Miscellaneous	6,855	
Total		15,460
Eastland County		
Gulf Production Co.	365	
Humble Oil & Ref. Co.	55	
Magnolia Petroleum Co.	650	
Mid-Kansas Oil & Gas Co.	175	
Panhandle Refining Co.	320	
Prairie Oil & Gas Co.	515	
Sinclair Oil & Gas Co.	385	
The Texas Co.	270	
Texas Pacific Coal & Oil Co.	825	
Miscellaneous	3,185	
Total		6,790
Other Fields		
Strawn—		
Texas Pacific Coal & Oil Co.	196	
Miscellaneous	615	
Moran—		
Empire Gas & Fuel Co.	45	
Humble Oil & Ref. Co.	340	
The Texas Co.	120	
Texhoma Oil & Ref. Co.	120	
Miscellaneous	1,815	
Coleman County—		
Miscellaneous	70	
Brown County—		
Miscellaneous	975	
Comanche-Eastland—		
Humble Oil & Ref. Co.	205	
Magnolia Petroleum Co.	1,235	
Mid-Kansas Oil & Gas Co.	240	
Sinclair Oil & Gas Co.	30	
The Texas Co.	170	
Texas Pacific Coal & Oil Co.	110	
Miscellaneous	1,975	
Young County—		
Gulf Production Co.	90	
Sinclair Oil & Gas Co.	420	
Panhandle Oil & Ref. Co.	175	
The Texas Co.	40	
Miscellaneous	4,835	
Mitchell County	1,635	
Reagan County	11,715	
Jack County	35	
Scurry County	45	
Carson County	1,515	
Hutchinson County	265	
Callahan County	2,085	
Wilbarger County	4,480	
Montague County	80	
Total		52,440
Total this week		130,105
Total last week		128,390
Gain		1,715

Wildcats—Drilling

Hutchinson County—Barnum and others' No. 1 Johnson is setting casing at 2,190 feet; New Domain Oil Co.'s No. 1 Barton is drilling at 2,005 feet; Prairie Oil & Gas Co.'s No. 1 Shaw, underreaming; Western Enterprise Oil & Gas Co.'s No. 1 Smith, fighting water at 3,105 feet; Wilson and others' No. 1 Whittenburg has oil show at 2,905 feet.

Carson County.—Crosby Oil Co.'s No. 1 Burnett is standardizing at 2,835 feet; Culberson Brothers' No. 1 Armstrong is setting casing at 3,250 feet; Gates Oil Co.'s No. 1 Burnett is drilling at 3,030 feet; Premier Oil Corp.'s No. Burnett at 2,205 feet; Marland Oil Co.'s No. 1 Burnett at 2,870 feet; Silk and others' No. 3-A Burnett at 3,010 feet; Skelly Oil Co.'s No. 2 Burnett has oil showinf at 2,950 feet; The Texas Co.'s No. 2-A M. C. Burnett, fishing at 2,712 feet; same company's No. 5 Burnett has gas showing at 2,195 feet.

Gray County.—Anderson and others' No. 1 Bradford at 1,465 feet; Clark and others' No. 1 Combs & Worley, standardizing at 2,680 feet.

Wilbarger County.—Atlantic Oil Co.'s No. 1 Parker is cleaning out at 1,350 feet; Barkley and others' No. 1 Stephens is underreaming; Bridwell and others' No. 1 Dill is drilling an oil sand at 1,995 feet; same company's No. 4 Dill is drilling an oil sand at 2,023 feet; Bridwell and others' No. 1 Waggoner, drilling at 610 feet; Burton and others' No. 1 Castlebury is spudding; Burton and others' No. 1 Waggoner, drilling at 275 feet; Dill Farm Oil Co.'s No. 1 Dill, fishing at 2,330 feet.

Wood and others' No. 1 George is spudding; Hamilton and others' No. 1 Kemler is drilling at 1,790 feet; Hoffer Oil Corp.'s No. 1 Waggoner, at 500 feet; Humble Oil & Refining Co.'s No. 3 Castlebury has an oil show at 1,300 feet; same company's No. 1 Waggoner is underreaming; Kolp and others' No. 2 Waggoner at 1,900 feet; Levy and others' No. 1 Waggoner, at 1,125 feet; same company's No. 1 Wheeler, underreaming; Lippard Oil Co.'s No. 1 Fluhman, drilling at 1,090 feet; Little Oil Co.'s No. 1 Youngblood at 1,820 feet; McCamey and others' No. 2 Stephens is fishing at 500 feet; No. 3 Stephens, drilling at 975 feet; No. 4 Stephens at 450 feet; Magnolia Petroleum Co.'s No. 47 Sumner at 875 feet; Mutual Oil Co.'s No. 1 Zipperly, underreaming; Noble Oil Co.'s No. 1 Waggoner is underreaming; Oklahoma Texas Refining Co.'s No. 1 Bowers is underreaming; Petroleum Production Co.'s No. 3 Dill is drilling at 1,765 feet; Priddy and others' No. 1 Castlebury at 1,250 feet; Ray and others' No. 6 Bond, setting casing at 1,830 feet; Ruff and others' No. 1 Waggoner, drilling at 1,450 feet; Skinner and others' No. 1 Streit at 1,915 feet; South Vervon Oil Co.'s No. 10 Stephens is stand-

(Continued on Page 120)

News from Fields of Canada

Vy Victor Lauriston

CHATHAM, Ont., Feb. 14.—In the Ontario Fields, the Union Natural Gas Co. is reported to be locating a new test in the Dover deep field, in Kent County. This test will be drilled through the Trenton limestone. The Union Natural Gas Co. is also starting a new test for gas in the old Tilbury Field, which will be drilled to the Tilbury sand.

In the Tilbury Field, the Stark & Spence producer on the Ball farm, near Fletcher is reported shut down waiting for materials to start pumping.

In the Thamesville Field, Kent County, the Ajax Oil & Gas Co.'s shallow test on the Earl Smith farm, Lot 5, Concession 13, Camden Gore, is reported to have a hole full of oil from sand around 400 feet in the corniferous limestone. The oil is reported very high grade, and is apparently top show oil. The test was planned to be carried approximately 650 feet to develop the possibilities of the lower horizons of the Onondaga limestone, where the E. P. Rowe deep test north of Thamesville had indicated a good oil sand between 600 and 640 feet. At the present horizon, however, the Ajax No. 1 looks like a good pumper, and may be finished there, and another test started. E. P. Rowe and associates, drilling on Lot 4, Concession 4, Zone Township, are reported to have encountered a good looking oil sand around 400 feet, but the well is not yet considered a commercial producer. Other companies are reported leasing territory in the vicinity.

In Norfolk County, the Dominion Natural Gas Co.'s No. 4 in the Courtland area, is drilling. No. 3 is still shut down.

In the Canadian West, unofficial reports that the Royalite No. 4 well in the Turner-Valley-Okotoks Field, southwest of Calgary, had increased its production from 300 to 500 bbls. are officially denied The well is, however, maintaining a steady daily production of 300 bbls. of light oil of 73 gravity, a fleet of 10 motor tank wagons being used to convey the output to the railroad siding at Okotoks for transshipment to the Imperial Oil, Ltd. refinery at Calgary.

Medicine Hat Field

In the Medicine Hat Field and the adjacent Many Island Lake Field in southeastern Alberta additional drilling is forecast for the coming season. Two new deep tests are to be drilled in the Many Island Lake Field this summer, in addition to the completion of tests now under way. In the Medicine Hat Field, two propositions for the drilling of deep tests for oil in the municipal gas area have been placed before the Medicine Hat City Council. A. E. Roth of Independence, Kans., some months ago made a proposition which is to be submitted to a vote of the people. A second proposition has been made by the Medicine Hat Petroleum Co., composed largely of local men, who have been drilling near Bullshead, about 8 miles from Medicine Hat, on Section 14-11-6w-4. This proposition is for the completion of the Bullshead test to a depth of 3,200 feet, which it is estimated will determine conclusively the possibilities of oil or gas in the horizons

(Continued on Page 98)

Approved by

"the biggest oil equipment laboratory"
[the hard boiled oil field itself]

THE simple fact that you men all bought these Davis Regulators, tried them out, and then came back for more—and more—and more—carries more weight than any claim we could make, doesn't it?

Built to stay out of trouble

THERE'S nothing tricky about the Davis Automatic Casing Head Gas Regulator. It is designed to control the vacuum on oil and gas wells, receivers and tanks in the manufacture of casing head gasoline. It has only one internal moveable part—a balanced, bevel-seated disc with graduated port openings which is securely coupled to a flexible diaphram. No springs or toggles—nothing to go wrong—just put it to work and forget about it. The counterweight holds it open, the vacuum closes it, and the oil-filled dash pot keeps it from hammering. What could be simpler?

Cutting out some grief

EVER have the regulator jam and let the still cool off? Or have it slip under pressure and deliver too much gas? The Davis Automatic Low Pressure Gas Regulator is designed to stay put at any pressure from five pounds to an ounce and stay there regardless of changes in the high pressure or the demand. It closes *tight* and when closed is unaffected by internal pressure changes. No outside piping is necessary when installing.

DAVIS VALVE SPECIALTIES

STEAM SAVERS SINCE 1875

Tell us where you are so we can send you the free catalog. You ought to have one handy. Address the G. M. Davis Regulator Co. at 409 Milwaukee Ave., Chicago, or Westcott & Greis, 1960 Santa Fe Ave., Los Angeles.

OGJ2-19F-kTU

North Louisiana-Arkansas

By M. L. Vauhn

Production declines 890 bbls. in Arkansas and 1,635 in North Louisiana. Five Union County completions show 1,262 bbls. initial production. Lion Oil & Refining Co.'s No. 6 Graves flowing 6,000 bbls. of fluid, 1,200 of which is oil. Ouachita County completions make 1,350 bbls., Cotton Valley 245.

SHREVEPORT, La., Feb. 16. — Production in both the Arkansas and North Louisiana fields fell off during the past week, the total decrease averaging 2,535 bbls. a day. North Louisiana production averaged 48,793 bbls., a decrease of 890 bbls. a day, and Arkansas production averaged 104,255 bbls., a decrease of 1,635 bbls. a day. Total production averaged 153,048 bbls., distributed as follows:

North Louisiana	
Bellevue	4,260
Caddo light	9,165
Caddo heavy	2,145
Cotton Valley	6,880
De Soto and Red River	4,358
Elm Grove	675
Haynesville	14,525
Homer	6,795
Total	48,803
South Arkansas	
El Dorado	9,670
Nevada County	1,220
Smackover light	32,445
Smackover heavy	58,835
Stephens	2,085
Total	104,255
Total both fields	153,058
Decrease	2,525

Carbon Black Restrictions

An effort is being made by the Arkansas legislature now in session to prevent the depletion of natural gas in that State by passage of a bill which prohibits the use of natural gas (except casinghead gas) within the State of Arkansas for the purpose of obtaining carbon black. The bill was referred to the committee on natural resources which reported in its favor.

Representatives of the carbon black interests in the Monroe gas field met in New Orleans and agreed to meet the demand of the conservation department in regard to reducing the consumption of natural gas in the manufacture of carbon. The conference represented 28 carbon companies, presided over by N. C. McGowan, of Shreveport, in charge of the Palmer interests. It was agreed to reduce the present consumption of gas, approximately 460,000,000 feet per day, 35 per cent, and it is estimated that by so doing the life of the field will be extended from 15 to 30 years. It was left to the carbon companies to make their own allotment of the gas to be used and a second meeting was held for this purpose.

Materials have been purchased for a gas line from the Monroe gas field to Ruston, and it will not be long before the citizens of that town will be enjoying the benefits of natural gas. T. L. James, who owns extensive gas holdings in the Monroe Field, has otained a franchise from the city of Ruston and the line will be built and operated by Mr. James and associates.

The Atlantic Oil Producing Co. has arranged for a half interest in the wildcat test in Claiborne Parish, and will complete the well started by J. P. Evans and others on the Taylor lease in Section 5-19-5. The contract includes a half interest in 120 acres immediately surrounding the well, J. P. Evans and H. H. Murphy retaining their entire interest in the remainder of the block of approximately 3,000 acres. The test is 5 miles north of Arcadia and 12 miles southeast of Homer.

Nevada County

J. K. Wadley is drilling at 1,500 feet in No. 1 Thompson, Section 33-14-28.

The Humble Oil & Refining Co. is drilling at 1,120 feet in No. 1 J. D. Pelt, Section 8-15-22.

Completions—Union County, Arkansas

Completions in Union County, Arkansas, numbered five, with three oil producers having an aggregate initial production of 1,262 bbls., one gas well and one dry hole in wildcat territory.

The British Allied estate completed No. 2 Jones, Section 21-16-15, pumping 50 bbls.. at 2,064 feet.

Gulf Refining Co.'s No. 2 Johnette, Section 33-15-16, made a 12-bbl. pumper at 2,272 feet.

Lion Oil & Refining Co.'s No. 6 Graves, Section 3-16-15, which came in January 28 making 6,000 bbls. of fluid of which 90 per cent was salt water at 2,501 feet, is now flowing at the rate of 6,000 bbls. of fluid a day, 1,200 bbls. of which is oil.

The Natural Gas & Petroleum Co. completed No. 1 Lawton, Section 10-16-15, making 30,000,000 feet of dry gas at 2,332 feet.

P. F. O'Brien and others have abandoned their test on fee land in Section 13-19-17, at 3,036 feet. The test was 7 miles west of the south end of the El Dorado district.

Ouachita County, Arkansas

Increased activity in the Smackover district resulted in the completion of 18 wells in Ouachita County, all producers, with an aggregate initial production of 1,350 bbls.

Arkansas Drilling Co. completed No. 4 Reynolds, Section 24-15-17, pumping 30 bbls. at 2,318 feet.

Burton, trustee, completed No. 11 Hughes, Section 21-15-16, swabbing 15 bbls. at 2,293 feet.

H. E. Clark's No. 3 Smith, Section 26-15-17, made a 185-bbl. pumper at 2,409 feet.

Ellis & Dumas completed No. 3 Forest City Box Co., Section 31-15-16, pumping 100 bbls. at 2,260 feet.

Forest Oil Co. completed No. 11 Cramer, Section 27-15-16, pumping 180 bbls. at 2,293 feet and No. 3 C. Minor, Section 20-15-16, pumping 15 bbls. at 2,327 feet.

Gulf Refining Co. completed No. 8 Fincher, Section 33-15-16, pumping 20 bbls. at 2,256 feet, and No. 3 Henry Murphy, Section 2-16-15, pumping 50 bbls. at 1,992 feet.

Hazen and others completed No. 1 Fincher, Section 29-15-16, pumping 20 bbls. at 2,273 feet.

Howell and others completed No. 2 Williams, Section 3-16-15, making a 12-bbl. pumper at 1,989 feet.

H. L. Hunt and others completed No. 2 Halton, Section 23-15-17, pumping 75 bbls. at 2,402 feet, and No. 1 School House, Section 26-15-17, pumping 75 bbls. at 2,410 feet.

Owens and others completed No. 2 Smith, Section 23-15-17, pumping 25 bbls. at 2,332 feet.

The Texas Co. completed No. 3 Johnson, Section 3-16-15, pumping 100 bbls. at 1,965 feet, No. 5 Reynolds, Section 23-15-17, pumping 120 bbls. at 2,337 feet, and No. 5 Reynolds, in the same section, pumping 183 bbls. at 2,349 feet.

Timberlake and others completed No. 1 Green, Section 23-15-17, flowing 100 bbls. at 2,302 feet.

In the Cotton Valley district, there were three completions during the week, adding 245 bbls. a day to the output.

Alabama Petroleum Co.'s first well on the Ramsey lease, Section 19-21-9, in the east end of the Cotton Valley district, is pumping 125 bbls. at 2,530 feet.

Humble Oil & Refining Co.'s No. 1 Gray, in Section 26-21-10, made a 15-bbl. pumper at 2,545 feet.

Ohio Oil Co. completed No. 1 Harris, Section 16-21-10, pumping 105 bbls. at 2,542 feet.

Springhill District

Belchic & Laskey completed No. 1 Martin, Section 34-23-10, making 50,000,000 feet of gas at 2,652 feet.

Elm Grove District, Bossier Parish

Arkansas Natural Gas Co. completed No. 4 Prince Horton, Section 30-16-11, making 5,000,000 feet of gas at 1,913 feet.

Bellevue District

In the shallow sand territory in Bossier Parish, G. W. Weatherbee completed No. B-15 on the Bliss & Weatherbee land, Section 15-19-11, pumping 20 bbls. at 355 feet.

Caddo Parish

In the Pine Island district, the Muslow Oil Co. abandoned No. 4 Brown fee. Section 31-21-15, testing dry at 2,345 feet.

Morehouse Parish

Natural Gas Production Co. completed No. 14 Crossett, Section 19-22-5, making 9,000,000 feet of gas at 2,266 feet.

Oil Field Exploration Co.'s No. 1 Pratt, Section 35-20-5, is making 1,000,000 feet of gas at 2,278 feet.

Ouachita Parish

Morrison and others completed No. 1 Glazier, Section 37-19-4, making 2,500,000 feet of gas at 2,204 feet.

Nevada County, Arkansas

Two good wells were completed in the Nevada County district during the week, adding 350 bbls. to the output.

The Autry Oil Co. completed No. 4 Womack, Section 10-14-21, pumping 200 bbls. at 1,199 feet.

Smitherman-McDonald completed No. 1 McKinney, Section 10-14-21, pumping 150 bbls. at 1,178 feet.

Drilling Operations

Union County, Arkansas

Drilling activity is steadily increasing in the El Dorado and Smackover Fields, as indicated by the number of new derricks and rigs. At the close of the week there were 19 new derricks and 11 rigged up and ready to start drilling.

The Arkansas Fuel Oil Co. is building derrick for No. 1 Scott, Section 1-16-17, and rigging up to drill No. 6 LaGrone, same section. Arkrado Oil Co. is drilling at 2,425 feet in No. 5 Hatfield, Section 7-16-15; Bradley & Cazart are drilling at 700 feet in No. 1 Pate, Section 16-17-17, and Broderick & Calvert at 2,315 feet in No. 2 Bradford, Section 8-16-15.

J. W. Clark has derrick up for No. 2 Palmer, Section 9-16-15, and Coats & Sowell is rigging up to drill No. 1 Springer, Section 36-17-16. Crawford & Sebastian set 12½-inch casing at 78 feet in No. 8 Giller, Section 14-16-15, and Crusaders Oil Producing Co. is rigging up to drill No. 5 Graves, Section 3-16-15. W. A. Dellmeyer lost the hole at 1,900 feet in No. 1 Ezell, Section 13-17-15, and is drilling at 1,400 feet in the second hole.

Gulf Refining Co. set 10-inch casing at 275 feet in No. 12 Alphin, Section 3-16-15, drillling at 1,850 feet in No. 1 T. P. Howard, Section 13-16-17, and has derrick up for No. 12 Hardy Murphy, Section 3-16-15. On the Lewis Werner lease, No. 18, Section 5-16-16, is drilling in with cable tools at 2,600 feet; No. 20, same section, has a fishing job at 2,625

(Continued on Page 94)

East Central Texas

By a Staff Correspondent.

MEXIA, Tex., Feb. 14.—The production of each of the five fields in the East Central Texas area is falling off weekly. For the week ending Tuesday, Wortham registered an average of 70,292 bbls. from 219 wells, a drop of 11,660 bbls. from the average of the week before, with a gain of 26 wells. On Thursday of this week the production had fallen to 64,100 bbls. from 221 wells, and on Friday to 61,857 bbls. from 223 wells. Powell fell off to 56,156 bbls. a day from 752 wells, 165 bbls. a day less than its average of the previous week with four fewer wells. Mexia averaged 17,635 bbls. a day from 470 wells, or 115 bbls. a day less than the previous week with no change in the number of wells. Currie was down to 1,420 bbls. a day, a decline of over 20 per cent in one week.

An important test in the Kosse area has been tested dry in the Edwards lime. It is C. H. Harrison's No. 1 Preston in Falls County, 2 miles west of the town of Kosse. It bailed dry at 3,642-60 feet and will be drilled deeper.

Recent completions in the Wortham Field include the following wells:

The Humphreys Boyd Oil Co.'s No. 3 N. B. Boyd, sand at 2,964-3,015 feet, 125 bbls.

Same company's No. 4 Boyd, sand at 2,999-3,019 feet, 55 bbls.

Same company's No. 2 W. D. Wilson, sand at 2,995-3,010 feet, 200 bbls.

Same company's No. 1 W. D. Wilson, sand at 2,974-3,014 feet, 150 bbls.

Same company's No. 4 W. E. Smith sand at 2,987-3,016 feet, 450 bbls.

Same company's No. 5 W. E. Smith, sand at 2,997-3,012 feet, 400 bbls.

Rio Bravo Oil Co.'s No. 5 Houston & Texas Central right-of-way, sand at 2,965-2,980 feet, 350 bbls.

Same company's No. 5 Houston & Texas Central right-of-way, sand at 2,950-2,965 feet, 350 bbls.

Farish and others' No. 2 McCorkle, sand at 2,990-3,018 feet, 200 bbls., 30 per cent b.s.

Atlantic Oil Production Co.'s No. 2 Williams, sand at 2,990-3,014 feet, 200 bbls.

Humble Oil & Refining Co.'s No. 2 K. C. Crouch, sand at 2,980-3,005 feet, 400 bbls.

Humble Oil & Refining Co.'s No. 2 T. P. Poindexter, sand at 2,995-3,010 feet, 160 bbls.

Simms Oil Co. and Marland Oil Co.'s No. 6 Simmons, sand at 2,970-93 feet, 300 bbls.

Humble Oil & Refining Co.'s No. 2 Finch, sand at 2,986-3,023 feet, 200 bbls.

Pure Oil Co.'s No. 5 Bounds, sand at 2,966-3,012 feet, 425 bbls.

Humble Oil & Refining Co.'s No. 6 Crouch, sand at 2,965-3,001 feet, 600 bbls.

Same company's No. 8 Crouch, sand at 2,955-2,995 feet, 700 bbls.

Same company's No. 4 Ella Dodd, sand at 3,005-29 feet, 150 bbls.

The Skelly Oil Co. was too far west in its test on the H. F. Seale farm, McNulty survey, and the test was drilled into salt water and abandoned at 3,052 feet.

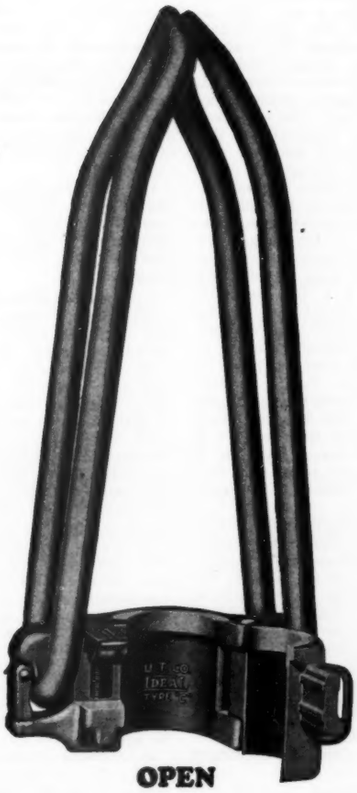
In Navarro County the Atlantic Oil

(Continued on Page 100)

IDEAL

TYPE "C"

SAFETY ELEVATOR



OPEN

Inset shows positive locking action of latch

The quick acting, positive locking latch facilitates speed in handling pipe with safety.

The NATIONAL SUPPLY COMPANIES

Pennsylvania-West Virginia

By D. S. Wakenight

Edward H. Everett Co. gets 160-bbl. producer in Madison Township, Licking County, Ohio. Sun Oil Co. has 30-bbl. completion in Morgan County. Hope Natural Gas Co. completes record gas well, Wetzel County, West Virginia, making 5,000,000 feet. Andrew Carral well, Tyler County, makes 100 bbls.

PITTSBURGH, Pa., Feb. 16.—The eastern fields completed fewer wells during the past week than for any like period in a number of years. There were only a few better than average producers. The best was a deep sand well in southeastern Ohio, the first worth while Clinton sand well completed in several weeks. It is the Edward H. Everett Co.'s test on the U. G. Porter farm, in Lot 15, Madison Township, Licking County. The well produced 160 bbls. the first 24 hours after it was shot in the Clinton sand. The location is 600 feet north of Whitehill & Co.'s No. 3 on the James S. Simpson farm.

Milder weather, such as has been experienced for a few days, will witness the full resumption of field work and the starting of some new. Operators and producers are of the opinion that the industry has returned to a new era of prosperity that can only be averted by the discovery of new and prolific producing territory.

Light Pumper in Licking County

In Section 3, Bowling Green Township, Licking County, the Midland Oil Co. has completed and shot in the Clinton sand a second test on the S. S. Copperrider farm. It is 600 feet north of the first test and good for 10 bbls. a day.

In Salem Township, Washington County, W. F. Meister & Co.'s No. 11 on the John Wolfert farm, is a duster. In Section 8, S. C. Turner's No. 8 on the Carrie Hull farm is a very light pumper. In Aurelius Township, J. T. Dillon & Co. have the same kind of a pumper at No. 32 on the Elizabeth Driscoll farm. Three-fourth of a mile southwest of the Welcome gas pool, Lot 13, Monroe Township, Holmes County, the Ohio Fuel Gas Co. completed in the Clinton sand a test on the L. W. Marford farm. It is dry and abandoned. A very small show of gas was developed but not enough to pay to connect it up. In Salem Township, Section 49, Washington County, Louis Bay & Co. have completed a 4-bbl. pumper in the 800-foot sand at a test on the Jacob K. Wagner farm. In Section 3, Hopewell Township, Perry County, the Empire Oil & Gas Co. has started to drill a test on the Sophia Orr farm.

Fair Producer in Morgan County

The Sun Oil Co.'s No. 6 on the C. E. Switzer farm, in Section 28, York Township, Morgan County, has been completed and shot in the Berea grit and good for 30 bbls. a day. In Lot 12, Franklin Township, Licking County, C. E. Saltzgaber, Son & Co. have a 3-bbl. pumper in the Berea grit at their No. 7 on the J. W. Motherspaw farm. In Lot 5, Madison Township, W. W. & A. T. Wehrle have completed in the Berea grit a test on the Louck farm, not good for more than one or two barrels a day. In Franklin Township, the same parties have started to drill No. 9 on the Taylor farm. In Washington Township, Belmont County, the Natural Gas Co. of West Virginia completed in the Berea grit a test on the Silas Durigg farm. It is a good gasser in the top of the sand. It is 1,000 feet north of the oil producer on the E. Ferguson farm. The Durigg farm test was not drilled as deep into the sand as the Ferguson farm.

In Section 7, Monroe Township, Holmes County, the Ohio Fuel Gas Co. completed in the Clinton sand a test on the W. C. Bird farm, one location west of the same company's test on the Alma Martin farm, good for 500,000 feet. In Lot 14, Hanover Township, Licking County, the Edward H. Everett Co. drilled a test on the U. G. Porter farm 10 feet into the Clinton sand. It is a gasser, estimated at 250,000 feet a day.

Shallow Sand Pumpers

In Franklin Township, Monroe County, the Marsh Oil Co. has drilled a test on the W. W. Marsh farm through the sand good for 5 bbls. a day. This is one-half mile south of the test on the L. F. Ball farm. In Section 20, Liberty Township, Washington County, Erbs & Payne completed in the second Cow Run sand No. 3 on the Harvey Scott farm, good for 5 bbls. a day. It is three-fourths of a mile northeast of the Citizens National Bank's test on the Anna Koon farm. In Section 11, same township, Dennis & Co. have a gasser in the Big Injun sand good for 500,000 feet at a test on the Jennie McAtee farm. In Section 19, William Huntsman and others are due in the sand at a second test on the Ora Erbs farm. In Section 68, Salem Township, A. J. Schantz & Co. have a duster at a second test on the Jacob Morganstein farm. In Madison Township, Licking County, Jones & Reese completed in the Berea grit No. 10 on the James McKinney farm. In Section 2, Marion Township, Morgan County, the Auburn Oil Co. completed and shot in the first Cow Run sand No. 2 on the Joseph Male farm, good for 5 bbls. a day. The same company's first test on this farm is a duster in the same formation.

In Section 35, Bethel Township, Monroe County, H. L. Timblin has a Squaw sand producer good for 6 bbls. a day at his No. 10 on the C. J. Bode farm. In Section 13, Washington Township, the Rose Farm Oil Co. is due in the sand at a test on the C. F. Rose farm. In Barfield Township, Perry County, Section 28, C. H. McCray is drilling on the Lemity-Thompson farm. In Section 36, Coal Township, the Ohio Fuel Corp. has a rig up on the Charles Trimmer farm. In Jackson Township, Edgar Denman & Co. are drilling No. 6 on the Martin Burns heirs' farm.

Noble County

In Section 19, Enoch Township, Noble County, Albert P. Sheets & Co. completed through the Buell Run sand a second test on the Andrew Estadt farm. It is showing very little oil but may make a very light pumper. In Section 22, same township and county, Way Wickens and others drilled a test on the J. M. Rowands farm through the 700-foot sand to a depth of 1,025 feet. It is a duster, three-fourth of a mile north of production, on the J. W. Mosley farm.

The Pure Oil Co.'s second test on the Roy Spencer farm, in Sutton Township, Meigs County, is a 5-bbl. pumper in the Berea grit. Miller & Taylor have a duster in the same formation at a test on the David Houdshell farm. The Brocalsa Chemical Co. is drilling on the Rufus Cottrall farm and W. N. Norris on the Jasper Jordon farm. The Brocalsa Chemical Co.'s test on the Daniel Roush farm is a duster in the Berea grit.

In McElroy district, Tyler County, Andrew Carral drilled his test on the J. V. Blair farm 6 feet deeper into the sand and increased its production to 100 bbls. a day. When drilled into the sand last week it showed for a light producer.

In Sardis district, Harrison County, West Virginia, the Hope Natural Gas Co. has drilled its test on the Nancy Griffin farm through the fourth sand to a total depth of 2,740 feet. It is a light gasser. In Collins Settlement district, Lewis County, the South Penn Oil Co. is drilling its old No. 1 on the Burnside heirs' farm to the lower sands. At the present time it is drilling at 2,900 feet and found nothing. In the same district, the Reserve Gas Co. is also drilling down an old well on the Alvodore Hughes farm. In Freeman's Creek district, the Hope Natural Gas Co. is drilling a test on the Martha Kemper farm. Drilling for production in the lower sands is something of a feature in both Lewis and Harrison Counties.

On Rowell's Run, Lee district, Calhoun County, the Hope Construction Co. completed a second test on the Albert Bell farm. It is 1,000 feet south of the first test and is a light gasser in the Berea grit.

Good Gasser in Wetzel County

The Hope Natural Gas Co. was agreeably surprised when it drilled its test on the James Allen 76 acres, on Carney Fork, Center district, Wetzel County, one-half mile south of the town of Silver Hill. The well was started with a view to getting an oil producer in the Gordon sand, but when it drilled into the Big Injun sand a strong gas pressure was developed and the well is estimated to be good for 5,000,000 feet a day, giving the well the record for gassers in that locality.

In the Goose Creek Field, Grant district, Ritchie County, the Penn Royal Oil Co. drilled its second test on the C. Lowther farm into the top of the Keener sand and good for 10 or 15 bbls. a day. This location is 2,000 feet west of the South Penn Oil Co.'s production on a part of the same farm. In Union district, Harrison County, the Reserve Gas Co. is running the 12½-inch casing at its proposed deep test on the Smith heirs' farm. It has reached a depth of 1,750 feet.

Boone County Operations

The Owens Bottle & Machine Co. is active in Boone County. In Scott district, this company has completed No. 5 on the Cassingham & Co. farm. It is a gasser good for 500,000 feet in the Berea grit. No. 6 on the same farm is drilling and due in the Big Injun sand. The same company has started to drill on the D. J. Smoot farm and due in the Big Injun sand on the Boone County Poor Farm. Its test on the Fuel Land Co.'s property is drilling at 1,500 feet. No. 6 on the T. W. Bedford farm has started to drill. In Sherman district, the Pure Oil Co. is drilling No. 15 on the Lafollette, Prichard & Robson tract.

Gassers in Boone County

On the waters of Big Coal River, Peytonia district, Boone County, the Owens Bottle & Machine Co. has a gasser in the Big Lime formation at No. 23 on the Coal River Mining Co.'s property. On Little Coal River, Scott district, Boone County, the same company has completed a gasser on the Bull Creek Coal Co.'s tract. In the same district, the same company's No. 9 on the Pryor-Allen farm is a gasser in the Berea grit good for 300,000 feet. In the same locality, this company has a gasser in the same formation at No. 5 on the Cassingham & Co.'s farm, good for 500,000 feet. The Clark Oil & Gas Co.'s test on the C. C. McKinley farm, in Grant district, Ritchie County, is a duster in the Big Injun sand. In the same district, the Hope Natural Gas Co.'s test on the C. S. Lewis farm is a gasser in the Berea grit. The same company's No. 3 on the M. T. Mason farm is a gasser in the Squaw sand. In Murphy district, the same company has a Maxon sand gasser on the H. C. Snodgrass farm. In Mannington district, Marion County, the Carnegie Natural Gas Co. has a show of oil in the fifth sand and shut down for orders.

Drilling Test Wells

In the Union district, Lincoln County, the Columbia Gas & Electric Co. has started to drill a test on the John Watts farm. In Grant district, Doddridge County, the Hope Natural Gas Co. is drilling on the Stephens Stuttler farm. The Carnegie Natural Gas Co. is fishing on the A. G. Mace farm in Center district, Wetzel County. In Church district, W. Null & Co. have part of the rig material at a location on the Thomas Phillips farm. In the same district, J. B. Orndoff is due in the Gordon sand on the Emma Kirkhart farm.

The Manufacturers Light & Heat Co. is due in the Gordon sand on the J. R. Reid farm, in Liberty district, Marshall County. In Washington district, the Myers Gas Co. is drilling in the top of the Gordon sand on the C. N. Ramsey farm. In Clay district, Wetzel County, the Manufacturers Light & Heat Co. has started to drill on the H. E. & A. E. Reid farm. In Skin Creek district, Lewis County, the Re Oil & Gas Co. has drilled to a depth of 3,300 feet on the T. J. Lough farm and shut down for orders. In Central district, Doddridge County, J. W. Dotson & Co. have rig material at a location on the F. M. Waldo farm. In Mannington district, Marion County, the Buffalo Oil Co. is due in the Big Injun sand on the Batey heirs' farm. In Reedy district, Wirt County, the Heck Oil Co. has started to drill a second test on the S. D. Sheppard farm.

The Mellon Oil Co. has started to drill a second test on the W. E. Conway farm in Grant district, Ritchie County. In the same district, J. O. Netzer is drilling on the R. W. Shaw farm. The Warrior Oil Co. has started to drill on the A. R. Phillips farm. In Murphy district, A. H. Smith & Co. are drilling on the S. Tibbs farm. South of Parkersburg, Lubeck district, Wood County, Stout Brothers are drilling a second test on the W. L. Munchmeyer farm. In Union district, Tyler County, A. McCullough is due in the salt sand at a second test on the Ada V. Parker farm. In Central district, Doddridge County, Nay & Williams are rigging up on the Luella Smith farm. In Southwest district, the Carter Oil Co. is still fishing on the W. H. Hufford farm. In Murphy district, the Hope Natural Gas Co. is rigging up on the J. M. Bymer and Emma Goff farms.

Kanawha County Tests

On Big Sandy Creek, Big Sandy district, Kanawha County, the United Fuel Gas Co. is very active in the gas areas. This company has the rig completed for a test on the Reamer-Brown farm. On Barrons Creek, same district, the rig has been completed on the Hulings-Cobb farm. On Poca Fork of Little Sandy Creek, Elk district, the same company has a rig up on the M. V. Jarrett farm. On Ruffners Fork, the rig has been completed on the Charles Halstead farm. The Columbia Carbon Co. has the rigs completed for Nos. 4 and 5 on the C. W. Vickers farm. On the north fork of Fishing Creek, Grant district, Wetzel County, the Hope Natural Gas Co. has cleaned out and shot an old gasser on the D. S. Cox farm. It is a very light pumper. In Cove district, Doddridge County, the Pittsburgh & West Virginia Gas Co. has a rig up on the W. H. Flesher farm.

In Perry Township, Greene County,

(Continued on Page 70)

The Frick-Reid Supply Co.

Quality Equipment

**AXELSON MACHINE COMPANY—Upset Double Pin Steel Sucker Rods, Reinforced Steel Pull Rods, Axelson and Amco Plunger Liner Working Barrels, Noxon Stuffing Boxes.*

BEAUMONT IRON WORKS COMPANY—Dreadnaught Rotaries, Pumps, Draw Works, Kellys, Swivels, Fish Tail Bits, Tool Joints, Casing Heads, Steel Fittings, etc.

CARBIC MANUFACTURING COMPANY—Oxyacetylene Welding and Cutting Apparatus.

DONOVAN BOILER WORKS—Oil Country Boilers, Locomotive and Code Type, 40 to 80 Horse Power. Gas Traps; 100 Barrel Welded Steel Tanks.

FRICK-REID—1-KW Turbine Generator and Accessories.

FRICK-REID—Service Rubber Belting, stitched and friction surface.

JOHNS-MANVILLE COMPANY—Packing to meet every need.

JONES & LAUGHLIN STEEL CORPORATION—Oil Well Casing, Tubing and Line Pipe.

NATIONAL TRANSIT PUMP & MACHINE COMPANY—Power and Steam Pumps, Klein Tongs, Refinery and Pipe Line Equipment.

JOSEPH REID GAS ENGINE COMPANY—Gas and Oil Engines for pumping and drilling. All sizes Band Wheel and Geared Pumping Powers. Refinery Receiving Boxes and Manifolds.

J. P. RATIGAN—Beam Hangers and Sure Grips.

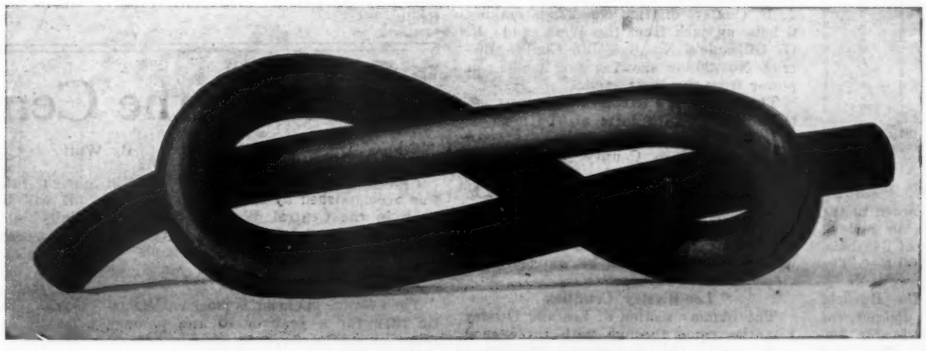
JOHN A. ROEBLING'S SONS COMPANY—Wire Drilling Lines, Sand Lines, Blue Center Casing Lines, Gas and Electric Welding Wire.

ROSSENDALE-REDDAWAY BELTING & HOSE COMPANY—"CAMEL HAIR" Belting for all conditions.

STANDARD SEAMLESS TUBE COMPANY—High Carbon Seamless Casing, Drill Pipe and Tubing.

STRUTHERS-WELLS COMPANY—Steam Drilling and Pumping Engines.

**WHITLOCK CORDAGE COMPANY—Manila Cables and Bull Ropes.*



*AXELSON SUCKER RODS

Knot tied in Axelson Sucker Rods when tubing parted in Simms Oil Co.'s F. A. Laney No. 6, Smackover, Arkansas. Rods were fished out of 6" casing with center spear. Tortured section of rod shown in picture is not broken or cracked. Typical of Axelson quality under stress.

Distributed by

FRICK-REID SUPPLY COMPANY

TULSA, OKLA.

West of the Mississippi—Stores Everywhere In Eastern Fields—Frick & Lindsay Co.

Kentucky—Tennessee

By Vern T. Whitney

Frank & Daugherty get best well in eastern division, 100 bbls., in Burfield section, Oil Valley district, Wayne County. Union Oil & Gas Co. has three producers in North Weir, making 85, 65 and 35 bbls. Black Gum Oil Co. gets three in Lee-Owsley district. R. A. McClain has 30-bbl. well in Allen County.

BOWLING GREEN, Ky., Feb. 16.—Even though the operators in the Blue Grass State are enthused with the upward trend of the oil market here they are not starting any elaborate campaigns. They look back to January, 1924, when oil took an upward hike, then going back to a low level at which it stayed throughout the year.

At this time of the year road conditions are bad and supplies cannot easily be hauled to well locations. However, the producers are pumping their wells to capacity, taking advantage of the recent increases which will no doubt boost the monthly runs from the field considerably if not offset by cold weather.

In the western division acreage is being purchased in advance of producing areas in Barren County, while some of the smaller producing leases in Warren and Allen Counties as well as in Barren, are being purchased by individual operators.

Week's Work

A summary of the week's work shows 3 more completions in the State, 6 more producers, with a decrease of 61 bbls. in production, 1 less dry hole and 2 less gassers. They were distributed by counties as follows:

County—	Comp.	Prod. Wells	Prod.	Dry	Gas
Barren	6	4	23	2	0
Allen	5	2	40	3	0
Lee-Owsley	4	4	41	0	0
Lawrence-Johnson	4	4	183	0	0
Johnson-Magoffin	2	2	8	0	0
Wayne	2	2	108	0	0
Logan	2	0	0	2	0
Cumberland	2	0	0	2	0
Simpson	1	0	0	1	0
Warren	1	1	10	0	0
Floyd	1	0	0	0	1
Wolfe	1	1	7	0	0
Estill	1	1	1	0	0
Total	32	21	421	10	1
Last week	29	15	482	11	3
Difference	3	6	61	1	2

Eastern Division

Fifteen completions are recorded in the eastern division for the week in review, 14 oil producers with a flush of 348 bbls. and one gasser rated at 100,000 feet. The best was Frank and Daugherty's No. 1 on the G. W. Burnett, in the Burfield section of the Oil Valley district, of Wayne County, which came in for 100 bbls. from the Beaver sand. This well will without doubt result in the drilling of a number of wells in its vicinity. In the Cooper district, the Vulcan Oil Co.'s No. 14 T. T. Davis is estimated at 8 bbls. from the Beaver sand.

The wildcat test of the Eastern Gulf Oil Corp. on the G. M. Ballard 400-acre tract in Jackson County, near the Rockcastle County line, is being drilled deeper to the Clinton sand. It was reported dry last week in the Corniferous. The Standard Oil Co. of Kentucky's well near Grey Hawk and 6 miles west of the Ballard test was shut down on top of the sand. J. N. Thompson's test on the D. J. Williams, near Boonesboro Beach, in Madison County is shut down at 400 feet. According to reports it will be drilled deep as soon as road conditions permit the hauling of material. In Greenup County, three ventures are being made; one by Engles and others on the Tobias Burke place, 3 miles north of Tygress Creek; another by Foreman and associates on the Reuben Potter on Leatherwood Creek and one by Young and associates on the Baglin farm. In Bell County, the Canada Peak Oil Co.'s No. 1 on Canada Mountain is shut down at 1,600 feet as is Rex Carpenter's test near Colfax is Harlan County.

North Wier Field

In the North Weir Field of Lawrence and Johnson Counties the Union Gas & Oil Co. brought in three wells. The best is No. 5 on the C. K. Dobyne lease, district No. 22, which started off at 85 bbls. from the Weir sand. In district No. 32, No. 4 Foster Ferguson made 65 bbls. the first pumping and No. 15 Levisa Skaggs, same district, showed 35 bbls. flush.

In district No. 22, Figley & Days' No. 5 S. C. Skaggs showed for 3 bbls. on the pump from the Weir sand.

The Union Gas & Oil Co., though selling its properties, will continue operating them for the next few months and at present is running 10 strings of tools. No. 2 Caney Sparks s spudding; No. 1 C. E. Frailey, rigging; No. 30 P. P. Holbrook, drilling in lime; No. 35 J. J. Gambill, cleaning out; No. 6 C. K. Dobyne, spudding; No. 5 W. D. Lester, cleaning out; No. 3 Foster Ferguson, drilling in lime; No. 4 Foster Ferguson, cleaning out; No. 15 Andrew Skaggs, cleaning out; No. 1 Castle heirs, drilling in lime.

South Weir Field

In the South Weir Field, comprised of parts of Johnson and Magoffin Counties, the Cumberland Petroleum Co.'s No. 7 J. P. Conley, district No. 27, is making 6 bbls. on jack from the Weir sand; R. G. Gillespie's No. 6 Tollie Conley, district No. 25, is showing for 2 bbls. on power from the Weir sand.

The Petroleum Exploration's test on the J. J. Howard farm at the head of Licking River, near the Knott County line, in Magoffin County, looks like a duster at 2,000 feet. The Pure Oil Co.'s test on Trace Fork of Licking River, in the southeastern end of the county, is making headway at 982 feet. Several locations have been staked in this part of the county that will be watched very closely.

Lee-Owsley Counties

The Idamay section of Lee and Owsley Counties came through with three good wells during the past week. The Black Gum Oil Co.'s No. 11 Gourley-Redman-Mc-Guire started off at 15 bbls. Combs Brothers finished their No. 1 Susan Tichner for 10 bbls., which extended production slightly to the east. On the Robinson farm French and others made a 6-bbl. strike in the initial test.

In district No. 18-B, the Hunting Oil Syndicate's No. 4 Huntington made 10 bbls. when placed on the pump at 1,200 feet.

In the Idamay sector, David Leed No. 1 is spudding in; Dan Gallagher No. 1 of the Petroleum Exploration was on top of the sand; Mart Davis and others were drilling at 230 feet on a location near White Oak Creek, southwest of the Petroleum Exploration's gas field. Beamer and others are starting a well on the headwaters of Little Sturgeon Creek, in Owsley County, while No. 1 J. S. Cooms, near the Smallhood lease, was shut down on top of the pay sand.

Other Completions

In Wolfe County, the Federal Oil Co.'s No. 4 E. B. Roberts, in district No. 9, is good for 7 bbls.

In Estill County, Charles Cox completed No. 17 Charles Cox, district No. 10, for 1 bbls. at 430 feet.

In district No. 21, of Floyd County, the Yolondo Oil Co.'s No. 1 Elbert Collins is a gasser from the regular sand.

Western Division

Nothing of importance is shown for the week in the western Kentucky Field. Out of 16 completions only 7 paying pumpers were had with an aggregate production of 73 bbls.

The best well of the week was R. A. McClain's No. 9 on the J. A. Frost farm in the Rodemer section, southwest of Scottsville, in Allen County, estimated at 30 bbls. from a depth of 114 feet below the black shale. Wells in this area are holding their production in fine shape, showing but very little decline after being three months old.

In the Kerley Pool, Bastrus & Work's No. 5 Lyle, 1,200 feet west of No. 4, was dry and plugged at 300 feet, 100 feet below the black shale.

A wildcat on the Kennedy farm, 6 miles east of Scottsville, drilled by Sutton, Pointer and others, is reported to be pumping 10 bbls. at 396 feet, approximately 90 feet below the black shale. Two other tests made by these same parties, one on the John Farley, 1 mile north of Scottsville, and the other on the Pin Brown, 4 miles east of Scottsville, were dry at 379 and 455 feet, respectively.

Very little headway was made in the Barren County Field the past week due to the larger percentage of the operators going to Cave City to try and render aid to Floyd Collins, entombed in Sand Cave.

The Emery-Moore Pool, southwest of Glasgow, furnished all of the completions. The Carter Oil Co. brought in three. Nos. 3 and 4 Gooden made 3 and 9 bbls. at 522 and 527 feet, respectively; No. 2 Jess Wininger pumped 9 bbls. from the sand at 185 feet below the shale. Stafford & Rhoedener's No. 2 Price heirs tested 8 bbls. at 431 feet, 180 feet below the shale; same parties No. 3 Neeley on South Fork Creek, adjoining the Neeley farm of the Kopel Oil Co., was dry and abandoned at 435 feet; Nelson and others' No. 1 Dossey at Oil City was a failure at 502 feet.

Cumberland County

The starting of two deep tests features the week in the Cumberland County Field. The Judio Co., Inc., has moved tools to a location on the Judio Dome at Judio Creek and also to the Travis Bee Farm on Bear Creek and will carry the holes to 2,000 feet unless oil is encountered. At present there are several wells producing from the deeper horizon, 800 feet below the Pencil Cave, on Sulphur Creek, Kettle, Creek, Bear Creek, Goose Creek and on Wolf River which shows the deep pay is within the bounds of reason.

Drilling Activities

At Sulphur Creek, Raydure and Son are deepening No. 2 on the Widow Coop; Jennings Brothers are moving a rig to the Coop farm to offset Raydure's No. 1 Coop. If this proves productive it will widen the northern extension of Sulphur Creek two locations; Morris, Combs and others are drilling No. 1 Coop, offsetting Raydure's No. 1, to the deep pay below the Cave; Hook and others' No. 1 Ves Nun is shut down waiting on a spud.

At Kettle Creek, M. L. Gartlan's No. 1 Maud Blythe has been reshot without any material increase in production. No. 2 was dry in the second Sunnybrook; No. 3 is spudding 400 feet southeast of No. 1.

The Vedder Oil Co.'s Nos. 1 and 2 on the Tompkins heirs farm at Fannis Creek are holding up at 175 bbls. per day on jack. No. 1 was recently deepened to the second Sunnybrook at 455 feet and started producing from that depth Janu-

(Continued on Page 70)

Fields of the Central West

By Whit

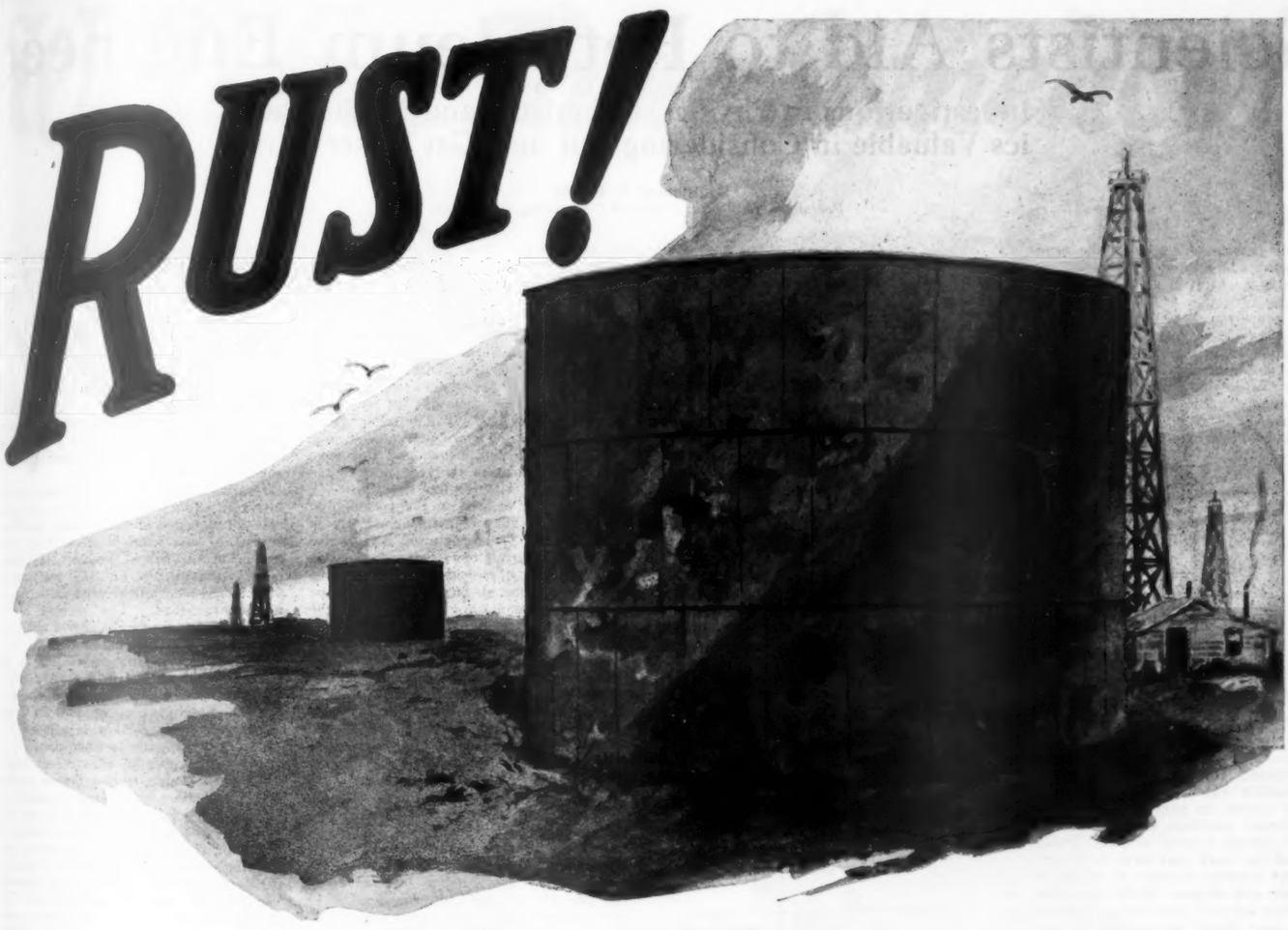
FINDLAY, Ohio, Feb. 16.—Very little was accomplished by the drill during the week in the Central West fields as the moving of material is out of the question. It will require at least a couple of weeks of steady sunshine to make the roads passable.

The average operator is more enthusiastic than for a year or so and is busy rounding up territory to develop outside of defined limits of production. It would not be surprising to see a lot of test work between Lima and Dayton during the coming summer. Some years ago Auglaize County was considered the south end of the Trenton Rock Field of northwestern Ohio, but in the past couple of years the field has moved quite a distance to the south toward Dayton, as Darke and Shelby, as well as the southern portion of Auglaize County are all now producing oil in commercial quantities. Paulding County, to the north, has proved that the north limits have not yet been reached.

Trenton Rock Area

About the same condition prevailing in the Lima Field, prevails over the Trenton Rock area of eastern Indiana. There is still a large area within what might be considered almost defined territory to drill, but thousands upon thousands of acres have been covered with leases and the early spring should see a revival of work not alone in the Trenton area but in many other parts of the State. The Hotmire Pool, along the dividing line of Jay and Randolph Counties, still has a bright future, although the saying is that oil will be found mostly in pools, especially along the Mississinewa River. Along this stream the oil is found from 150 to 250 feet down in the Trenton, which means that the production will hold better than from the more shallow pays. The wells in the Hotmire Pool usually start off as large producers and gradually settle to normal pumpers, but do not go like a flash as is the case in some areas. This pool is but a few miles from the town of Ridgeville in Randolph County and directly south of Portland, in Jay County. The bulk of the pool lies in Sections 33, 34, and 35, Pike Township, Jay County, and a smaller part lies in Section 3 and 4, Ward Township, Randolph County. The pool proper lies east and southeast of the main Trenton Rock Field of Indiana. It is between the southern extension of the old Trenton area in Delaware County, Indiana, and the southwesternmost extension of the Lima Field of northwestern Ohio. This pool in itself is approximately 3 miles long and half a mile in width, the heavy portion being on the Jay County side. It is similar to the Albany Pool or De Soto Pool of Delaware County, which is also along the same river and between the two pools and others may be opened. This river runs through the western portion of Ohio and there is quite a distance between the Hotmire Pool and the Ohio State line to open other pools. The coming summer should prove whether other

(Continued on Page 76)



How To STOP The Rust Action

It must be done and done effectively. The proper paint foundation, in other words the primary coat of paint, must do it. Number "6" Red Tnemec Paint will actually absorb the incipient rust and prevent its further action. Why? Because the Portland cement pigment is the best rust inhibitive agent known.

Our nearest store has it in stock for your convenience. Ask us about it.

"If Continental Sells It, There Is No Better"

THE CONTINENTAL SUPPLY CO.
General Offices: St. Louis

Export Offices: 2 Rector St., New York.
London Office: Finsbury Court, Finsbury Pavement, London, E. C. 2, England
"More Than 70 Stores In The Oil Country"

CONTINENTAL

Scientists Aid to Petroleum Engineer

Investigations in Physics, Chemistry and Mathematics Valuable in Considering Oil and Gas Reservoirs

By Stanley C. Herold
Petroleum Geologist, Stanford University, California

The petroleum engineer who bases his knowledge of oil and gas reservoirs solely upon data observed at the well is failing to take advantage of the fund of information concerning liquids, gases and vapors which has been handed down to him by scientific investigators in physics, chemistry and mathematics. Since the middle of the seventeenth century many of these investigators have made most valuable discoveries in their laboratories and their work has been carefully tested by scores

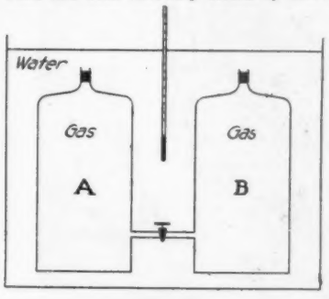


Figure 158

of equally eminent scientists who have frequently extended the original work, have shown its practical application to particular problems of economic life, and have clearly pointed out any limitations which the work may have in practice.

Our present purpose is to gather together and discuss briefly the most important scientific laws which seem to have the most direct bearing on the behavior of reservoirs in order that we may afterward apply the principles to the three classes of oil and gas wells encountered in the field; to wit: hydraulic, volumetric, and capillary control.

Joule's Law*

157. "The intrinsic energy of a given mass of perfect gas depends upon its temperature only, and is independent of the volume which it occupies."

An actual gas possesses intrinsic energy of two kinds:

(a) That due to the motion of its molecules. Its magnitude is reckoned as a function of the average velocity of all molecules as they dart about, colliding with one another or with the walls of the containing vessel.

(b) That due to the attractive or repulsive forces between molecules on account of their mass. (Analogous to gravitational forces or to magnetic forces.) Its magnitude is assumed to be a function of the average distance between molecules.

By definition, a perfect gas possesses molecules without mass; therefore, it has no intrinsic energy of the second kind. By virtue of this ascribed property, not only may a perfect gas comply with Boyle's Law but with Joule's Law as well (Article 103), because no amount of pressure brought to bear upon such a gas will cause to come into action any forces which are due to the incompressibility of solid matter or which are due to attraction or repulsion between masses.

At ordinary pressures the intrinsic energy possessed by an actual gas is due almost, but not quite, entirely to energy (a). Apparently the molecules are sufficiently far apart so that forces due to mass are very small, generally negligible as compared with those causing or accompanying very rapid motion. For any given actual gas, the preponderance of (a) over (b) may be increased by either raising the temperature of the gas or decreasing the pressure to which it is subjected, or notably by doing both. The greater the preponderance, the more nearly does the actual gas fulfill the laws of Boyle and Joule. On the other hand, high pressures and low temperatures cause a proportional increase in (b) and under these conditions the actual gas deviates widely from fulfillment of the laws. In fact, when these conditions are sufficiently extreme, the gas will break down completely and become a liquid.

The intrinsic energy of liquids and vapors (which physically depart far from the concept of a perfect gas) does depend upon volume as well as upon temperature.

Apparatus Explained

158. The law was established experimentally by Joule with an apparatus as shown in Figure 158. It consisted of two strong receivers, A and B, connected by a short tube fitted with a stopcock; all being immersed in a bath of water provided with a sensitive thermometer. Air in A was compressed to 22 atmospheres while from B the air was exhausted. The water was constantly stirred; the temperature was noted and the stopcock opened, allowing the air to rush from A to B. After equilibrium was again established, the temperature was again read. No change was detected.

From the conditions of the experiment no work external to the receivers was

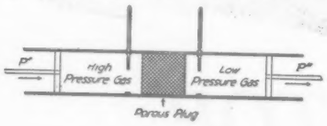


Figure 159

done by the gas. Since the water remained at the same temperature, no heat passed into the gas from the water. Consequently, the intrinsic energy of the air was the same after the expansion as before. If the increase of volume had required the expenditure of internal work in forcing molecules apart against their mutual attractions, that work must necessarily have come from intrinsic energy of the gas due to motion of the molecules, and as a result, the temperature would have been lowered. Inasmuch as the temperature remained constant, it is to be inferred that no such internal work was required. Air has, therefore, no appreciable intrinsic energy due to forces between the mass of the molecules; at least within the range of pressures and at the temperature of the experiment. The test was repeated on various other permanent gases with like result.

The experiment was subsequently modified and the two receivers were placed into separate vessels of water. Then the water surrounding A showed a fall in temperature while that surrounding B was raised by exactly the same amount. This experiment explains the first because the cooling effect of expansion upon the performance of work which A did upon B was offset by the heating effect of compression which took place in B. In both experiments the total intrinsic energy possessed by the given mass of gas was unaltered by the change in the volume which it occupied.

Weak Point in Experiment

159. Joule's experiment possessed a weak point in that water was used to indicate a change of temperature in a gas. The gas might have suffered a slight change in temperature without its being detected in the water on account of the difference between the specific heats of the two fluids. The best that could be said was that no heating or cooling effect of any considerable magnitude occurred.

Means were devised so as to measure the temperature of the gas directly. With the aid of Sir William Thompson* the test which has since been termed "the porous-plug experiment," was performed by Joule. This experiment showed that the law was nearly true but for no actual gas was it perfectly so. The gases which were known to be more perfect complied more closely with the law, and this gave rise to the assertion that the perfect gas would comply with the law exactly.

The apparatus used in the porous-plug experiment is shown diagrammatically in Figure 159. It consists of a cylinder fitted with two pistons; between these is placed a plug of cotton held in position by two perforated supporting disks or pieces of wire cloth. Assume that the pistons are gas tight and frictionless; also that the walls of the cylinder are properly insulated so that no heat passes from the exterior to the interior, or vice versa, during the course of the experiment. Two sensitive thermometers are provided as shown.

The test consisted in placing various gases within the cylinder, moving the pistons carefully so that the high pressure P' was maintained constant as the gas passed through the plug and expanded to the low pressure P," which was also maintained constant by properly moving the second piston. Whereas the previous experiment provided for free expansion of the gas, the present one was devised so as to operate under restricted expansion.

Showed Cooling Effect

At ordinary temperatures and pressures all gases tested, except hydrogen and helium, showed a cooling effect. These two gases showed a heating effect. At low temperature, however, even these gases behaved as the others; they evidently passed through a temperature where neither heating or cooling is effected by expansion. Presumably all

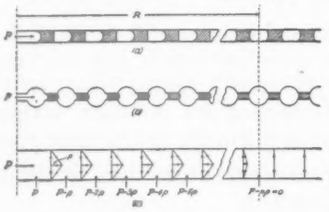


Figure 176

gases which are cooled at ordinary temperatures will show such an inversion at higher temperatures. The thermal effect was always proportional to the difference between the pressures on the two sides of the plug for any given temperature maintained constant on the high pressure side.

The change of temperature resulting from the expansion of actual gases is termed "The Joule-Thompson Effect." It is very satisfactorily explained by the principles of Thermodynamics. Forces due to the molecular mass of most gases are attractive, whereas with hydrogen and helium they are repulsive forces, at ordinary temperatures.

The porous-plug experiment not only permitted more accurate determination of temperature changes but the plug itself tended to prevent eddy currents near the orifice where expansion actually takes place. These eddy currents in themselves are quite sufficient to upset the results of the experiment where they are not properly curbed.

The fact must not be overlooked that Joule's Law only concerns the intrinsic energy of a gas before and after expansion. It deals exclusively with the internal work performed within a reservoir.

160. Porous-plug experiments need not be confined to the so-called permanent gases; the Joule-Thompson effects for vapors may be determined as well. Greater cooling effects are to be expected in so far as they depart widely from the perfect gas. Thus we may obtain data on all gases and vapors encountered in natural reservoirs.

Cooling effects signify a decrease in the intrinsic energy due to motion of molecules on account of their mass. Intrinsic energy of one kind is transformed into the other: it takes the form of "latent heat," unavailable for the performance of external mechanical work at the resulting temperature. The problem of external work will be considered under the subject of Thermodynamics.

A frequent result of cooling is the manipulation of the orifice (Article 71) by the freezing of any water present or by the precipitation of paraffin which would otherwise remain in solution.

Corresponds to Conditions

161. The plug in the present experiment corresponds to the porous medium which is known to fill many natural reservoirs. Instead of a piston on the high pressure side we have either a column of liquid or compressed gas capable of performing external work against a pressure represented by the constant back pressure. (Articles 98 and 65, respectively). Inasmuch as the latter is constant, no piston is required to maintain the conditions specified for the low pressure side in the experiment. The only difference between the porous-plug experiment as performed and the behavior of the reservoir with a porous medium is the matter of space measurements; obviously the latter is on a much grander scale. Let us examine into conditions within the smaller "reservoir" (which the cylinder in the experiment really is) and see what they signify for the larger reservoir. It becomes necessary to anticipate a principle of Thermodynamics; to-wit: that the capacity of a gas to perform external work may be calculated by taking the product of the pressure and volume. We now deal in absolute phase. The same principle applying to liquids, although pertaining only to potential phase, was established in Article 155.

The work performed by the piston on the gas at the high pressure side of the plug is equal to P'V' and that performed by the gas on the piston at the low pressure side is equal to P"V," where

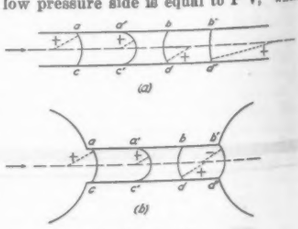


Figure 177

P' and P" represent the high and low pressures respectively; V' and V" represent the volumes occupied by the gas on the corresponding sides of the plug. The net work done upon the gas is equal to the difference between these two quantities; that is,

Net work = P'V' − P"V"

The gas has therefore gained just this quantity of energy because heat has

(Continued on Page 62)

*James Prescott Joule, English physicist. 1818-1889. Law dates 1845. Gay-Lussac had previously performed the basic experiment but Joule improved upon his work.

*Sir William Thompson (Lord Kelvin) English physicist, 1824-1907.

We'll Get There Somehow!

Write for Booklet
"Scientific Oil Well Cementing"
HALLIBURTON OIL WELL
CEMENTING CO.
Duncan, Okla.

Equipment Available for all Fields

HALLIBURTON

Scientific Oil Well Cementing

MEN KNOWN IN OILDOM

Dr. E. R. Lederer

The advantages of having a father who believed in making his son study hard and work hard to get on his own feet are seen in the achievements of Dr. E. R. Lederer, vice president of the Invincible Oil Corporation, the Louisiana Oil Refining Corporation, the Invincible Oil Company, and a director of the Montrose Oil Refining Company.

Doctor Lederer was born in Vienna, Austria, May 21, 1882. His father had a chemical laboratory and factory and made him work hard during vacations and after graduation. His schooling was obtained at the University of Heidelberg, in Germany; the University of Vienna, in Austria, which conferred on him the degree of Doctor of Philosophy in 1906; and the University of New York, where he received the degrees of chemical engineer and mechanical engineer.

From 1906 to 1913, Doctor Lederer was chemist for the Vacuum Oil Company and affiliated concerns in Galicia and Rumania; during 1913 and 1914, he was assistant chief chemist for the Standard Oil Company of New Jersey at the Bayonne refinery; and during the latter part of 1914, and in 1915 and 1916, he was chief chemist for the Atlantic Refining Company at Franklin, Pa. His next work was as general superintendent of the Galena Signal Oil Company of Texas, at Houston, from 1916 to 1919, and he built and managed the first refinery on the ship channel during the war.

During the war, he also specialized in the manufacturing of low cold test lubricants for airplanes and machine guns for the Allied armies, and in 1919 became manager of the refining department of the Atlantic Gulf & West Indies Steamship Company and the Atlantic Gulf Oil Corporation, in New York. He constructed pipe lines, pumping stations and loading terminals in the southern oil fields of Mexico, and also a 10,000-barrel topping plant at Tecomute, Mexico, and a terminal and 1,000-barrel refinery in Southampton, England, for the same interests.

In 1922, he opened offices in New York as a consulting engineer but was soon afterward elected vice president of the Invincible Oil Corporation to reorganize its refining department, and moved to Shreveport, La., in October of 1922. He increased the company's topping plant to 9,000 barrels, constructed a new lubricating plant with a special new vacuum process, and also built a new 4,000-barrel cracking plant.

After March 1, Doctor Lederer will be connected with the Texas Pacific Coal & Oil Company, at Fort Worth, Tex., as vice president in charge of refineries and gasoline plants.

He is a member of the American Society of Mechanical Engineers, the American Chemical Society, the American Institute of Mining & Metallurgical Engineers, the American Society for the Advancement of Science, the Manhassett Bay Yacht Club, the Shreveport Golf and Country Club, the Shreveport City Club and the Shreveport Riding Club.

PERSONAL PARAGRAPHS

George G. Battle, of New York, was a visitor last week in Denver, Colo.

* * *

W. R. and W. E. Ramsey, of Los Angeles, Cal., were recent visitors in Tulsa, Okla.

* * *

W. D. Rogers, of the Tide Water Oil Company, was in Oil City, Pa., on business recently.

* * *

G. E. Hamilton returned recently to Casper, Wyo., from a visit to his old home in Columbus, Ohio.

* * *

F. C. Zimmer, of Petrolia, Ont., has left for Venezuela after a three months' furlough in Canada.

* * *

Homer T. Lamb, president of the Red Bank Oil Company, left Tulsa last week for New York City.

* * *

L. Rex Babbitt, of the Oil Jobbers Corporation, of Buffalo, N. Y., recently completed two large fuel oil contracts.

* * *

H. A. Meyer, of the Prairie Oil & Gas Company's main office in Independence, Kans., was a recent visitor in Tulsa.

* * *

W. L. Connelly, of the Mammoth Oil Company, recently returned to Casper, Wyo., from a business trip to New York.

* * *

C. L. Reid, formerly scout in the Wyoming fields, for the Gypsy Oil Company, has been transferred to Ponca City, Okla.

* * *

A. C. Wixon, division sales manager of the Producers & Refiners Corporation, recently spent several days at Memphis, Tenn.

* * *

C. K. Clark, vice president and general manager of the Standard Oil Company of Louisiana, is in New York on business.

* * *

George D. Locke, vice president of the Barnsdall Refining Company, stopped off at Chicago on his trip from New York to Tulsa.

* * *

E. R. Perry, of Tulsa, was a recent visitor in El Dorado, Kans., where he owns an interest in the Moore Refining Company's plant.

* * *

J. A. Knox, of Pittsburgh, Pa., who has interests in the Nowata district, in Oklahoma, has been visiting Nowata, Bartlesville and Tulsa.

* * *

R. A. Josey, president of the Josey Oil Company, is in Huntsville, Tex., where he was called by the serious illness of his father, E. T. Josey.

* * *

I. N. Bettison, pioneer coastal contractor, has returned to Houston, Tex., from the Wortham Field and left for the Jim Hogg County development.

* * *

C. K. Clark, vice president and general manager of the Standard Oil Company of Louisiana, is in New York on a combined business and pleasure trip.

* * *

J. A. Trisler, vice president of the Imperial Refining Company, recently returned to Tulsa from a trip to the company's refineries at Ardmore and Oklahoma City.

* * *

W. H. Cochran, of Oklahoma City, formerly of Tulsa, is in Houston, Tex., looking over the situation in the Coastal Plains region. He is representing Eastern people.

* * *

E. O. Sanquinet, vice president of William S. Barnickel & Company, manufacturing chemists of St. Louis, Mo., and H. B. Segner, sales engineer of the company, with headquarters in Tulsa, Okla., were visiting fields in the Mid-Continent territory during the past week.

F. A. Pielsticker, and G. A. Slocum, of El Dorado, Kans., returned recently from a sales conference of the Skelly Oil Company's sales department officials held in Tulsa, Okla.

* * *

W. H. Foster, vice president of the Foster-Reiter Corporation, left last week for Austin, Tex., where his company is assembling a block of acreage in the vicinity of the Luling Field.

* * *

Byron D. Benson, director of sales department for the Tide Water Oil Company, sailed on the steamship "Paris" for Europe. He was accompanied by his family, and will return April 1.

* * *

K. B. Nowles and E. J. DeWees, petroleum engineers of the Bureau of Mines, recently completed a survey of the Lance Creek Oil Field in Wyoming, and are in Laramie, writing their report.

* * *

Lee Scott and R. R. Irwin, vice presidents of the White Eagle Oil & Refining Company, returned to Kansas City recently from a trip to Casper, Wyo., where a refinery of their company is located.

* * *

A. B. Bartlett, State geologist of Wyoming, spent several days in Casper, Wyo., recently in consultation with officials of the Midwest Refining Company, regarding the situation on North Casper Creek.

* * *

R. M. Young, vice president and general manager of the Carter Oil Company, returned recently from the annual conference of officials of the Standard Oil Company of New Jersey, held in New York.

* * *

Homer Johnson, president of the Johnson Oil & Refining Company, has been visiting the Pittsburgh, Pa., offices of the organization, while J. J. Johnson, vice president, has been at the refinery at Cleveland, Okla.

* * *

Charles O. Dale, chief engineer for the Magnolia Pipe Line Company at Hull, Tex., was a recent Houston visitor. He is a native of Oil City, Pa., but has been located in the Southwest for fifteen years.

* * *

A. G. Ford, formerly with the Western United Gas & Electric Company, has been engaged as field engineer by the Barber-Greene Company, of Aurora, Ill., to aid in the sale and application of the Barber-Greene ditchers.

* * *

Charlie Laskey, of Belchic & Laskey, who recently sold out their interests in the Cotton Valley district, Louisiana, to the Crusaders Pipe Line Company, is spending a week in New York on a combined business and pleasure trip.

* * *

F. V. Faulkner, vice president of the Magnolia Petroleum Company, and manager of the production department, was a recent visitor to the Coastal Plains territory to confer with A. F. Denniston, of the land department at Houston, Tex.

* * *

Charles F. Ball, of the Sivyer Steel Casting Company, Milwaukee, Wis., made a trip to New York and other Eastern cities recently on business for his company, returning to Tulsa last week. Mr. Ball represents the Truk-Trak division of his company.

* * *

John L. Gray, vice president and general manager of the Shaffer Oil & Refining Company, while in Chicago recently celebrated his fiftieth birthday and was the recipient of many congratulations. He was accompanied by Lynn B. Riddle, vice president in charge of production.

* * *

W. H. Geis, of Casper, Wyo., and Miss Isabelle Copinger, of Washington, D. C., were married in that city the past week by Father John Mullin, of Casper, Wyo., who was visiting in the East. Mr. Geis is well known throughout the Rocky Mountain region as a geologist.

* * *

G. B. Wilson, treasurer and legal counsellor of Wilson Oil Tools Corporation, Los Angeles, Cal., sailed from New York on February 9 for a European tour which will cover a period of four months. During Mr. Wilson's stay in Europe he will visit Berlin, Paris, London and contemplates a trip to the Persian oil fields.

"Has No Equal"
To make hole with speed through hard rock requires a chipping, crushing action.
HUGHES SIMPLEX ROCK BIT CONES
—with their hundreds of hardened steel teeth, deliver this action at the bottom of the hole in such manner as to produce maximum footage through the hardest formations.
Hughes Rock Bits and parts carried in stock at your supply store.
HUGHES SIMPLEX ROCK BIT
The Rock of Gibraltar
1439 Feet High
2¾ Miles Long
¾ Mile Wide
HUGHES TOOL CO.
HOUSTON TEXAS
BRANCHES
LOS ANGELES
NEW YORK CITY
JEAN WALKER

EQUIPMENT AND SUPPLIES

PUMP DESIGNED FOR GATHERING SERVICE

A recent addition to the line of "pumps for every service," manufactured by the Goulds Manufacturing Co., of Seneca Falls, N. Y., is a duplex, double-acting pump especially designed for gathering service such as delivering oil from the lease to the station storage tanks. It is built in the 3½ by 10-inch size and has a capacity of 90 gallons a minute, or 3,1000 bbls. for 24 hours at the normal speed of 60 revolutions a minute. It is designed for a working pressure of 500 pounds per square inch. The suction and discharge connections are 3-inch and 2-inch respectively and the pump comes regularly equipped with tight and loose pulley for belt drive.

The main bearings and pinion shaft bearings are of the adjustable 8-piece type with cup lubrication. They are lined with babbitt metal, accurately bored and scraped to a running fit. The crank shaft is made of high carbon, open hearth steel, the connecting rods are of forged steel, with bronze boxes at the crank end and removable bronze bushings at the crosshead end. The cylinders are of close grained cast iron with cast bronze removable lines. The piston rods are of high carbon machine steel.

Full description and specifications of this pump will be found in a new edition of the company's bulletin No. 115, devoted to pumps for the oil industry, which will be off the press soon and which will be sent to anyone interested upon request.

BULLETIN ON WATER FILTERS

"Pressure Type Walter Filters" is the subject of bulletin No. 501 issued by Graver Corp., East Chicago, Ind.

The bulletin describes filtration methods and shows the construction of the Graver filters which are furnished with a perforated strainer plate instead of a pipe manifold and strainer heads for the collection of the filtered water.

The water to be filtered enters the tee at the centr of the vertical pipe and passes upward through a valve into the shell of the filter near its top. The water is distributed about the top of the filter chamber without eddies by means of a large up-turned diffusing funnel and passes through the filtering medium and perforated strainer system, into the outlet pipe in the center of the bottom.

Complete tables of sizes and capacities are given in the bulletin.

PIPE MILL BUSINESS IMPROVING; STEEL RESTOCKING ABOUT COMPLETED

By B. E. V. Luty

PITTSBURGH, Pa., Feb. 16.—Trade conditions as to the pipe mills have improved further in the past week, while for the steel industry as a whole the outlook has become less promising. While the difference may seem curious, there are reasons.

In tubular goods there has been no forcing of the market, for merchant pipe and oil country goods did not decline in 1924 from the price level reached in April, 1923, hence there was no danger of advances, and buyers simply ordered what they needed. At this time of the year buying would naturally increase, since the most active period of consumption is just ahead, and buying is increasing.

In nearly all other steel lines, on the other hand, prices declined last year and then after election an advancing tendency set in, influencing buyers to anticipate requirements. Production of steel has been very heavy in the past three months, representing current consumption plus replenishment of stocks. As this restocking is now nearly completed, and prices are considerably higher almost all along the line, buying is now much lighter, and while there is much contract tonnage, specifications against contracts have grown lighter. It is possible the general rate of steel production has already turned downward, but if it has not, there is a plain prospect that it will very shortly.

At 89 Per Cent Capacity

The official report of steel ingot production in January shows 4,179,498 gross tons produced, which represents 89 per cent of estimated capacity, commonly taken at 54,000,000 tons a year, against 78½ per cent in December. As the average rate of production during the past two years was 74 per cent, and consumption seems to have been running lately at about the same rate as formerly, there has been excess production. The mills did not themselves overproduce, as they merely filled their customers' requirements, but it is evident many buyers have been receiving more steel than they were consuming, stocks being replenished.

The Steel Corporation's unfilled obligations at the end of January were reported at 5,037,323 tons, representing an increase during the month of 220,647 tons. Ordinarily this would be considered a very good report, but when December had shown the remarkable increase of 784,707 tons, the 564,000 tons less decrease in January will look to some observers almost like a loss.

Bars, shaps and plates seem to be holding strictly at the recently advanced price of 2.20c f.o.b. mill, Pittsburgh district, but there is hardly any buying, as the trade had been very thoroughly canvassed before the advance. The advanced sheet prices recently announced for second quarter 2.80c for blue annealed, 3.70c for black and 4.85c for galvanized, are not being received to any extent, as there are many mills still ready to sell at the old prices, if the buyer will specify and agree to take delivery at mill convenience. Probably some mills have sold for the entire quarter at the old prices: The advance in wire products is of much the same character. The new prices, with nails at $2.95, are in full force, technically, but buyers did not contract very freely at the old prices, on the eve of the recent advances, having specified quite fully on the still older contracts, made late in November, at $2.75 for nails.

Drilling Supplies Gain

The market in tubular goods, on the other hand, has simply been standing on its own bottom, jobbers and consumers having made conservative engagements right along, so that now they are buying somewhat more freely in keeping with the progress of the season. Week by week there is increased buying in casing, tubing and other oil drilling supplies. Pipe mills are confident 1925 will be a very active year indeed for drilling.

In the past couple weeks it is estimated fully 150,000 tons of line pipe business has been done. The Andian Corporation placed 370 miles of 10-inch, about 40,000 tons, with the National Tube Co., this being the order repeatedly rumored last summer as having been placed, the reports being successively denied. The Pure Oil Co. placed an order for 140 miles of 8-inch, about 25,000 tons; the Marland-Humble Co. line, 200 miles 8-inch, 25,000 tons, divided two-thirds to the Youngstown Sheet & Tube Co. and one-third to Jones & Laughlin Steel Corporation. The Houston Oil Co. has placed an order with the National for a gas line in Texas, and there has been some other business. Merchant pipe demand keeps good right along.

STORE FOR NEW POOL

The effects of the development of the Watchorn Pool and the discovery by Smith and Donohue and others of another pool in western Pawnee County are shown in the announcement by the Bridgeport Machine Co., of Wichita, Kans., that a new Bridgeport branch store is being opened in Pawnee, Okla., with the expectation that it would be ready for business by February 15. Ed Mackey, formerly manager of the company's store at Shidler, Okla., will have charge. This is the first tool store to be opened in the western Pawnee territory and will handle the full Bridgeport line including rental underreamers and American wire.

CLIMAX SALES CONFERENCE

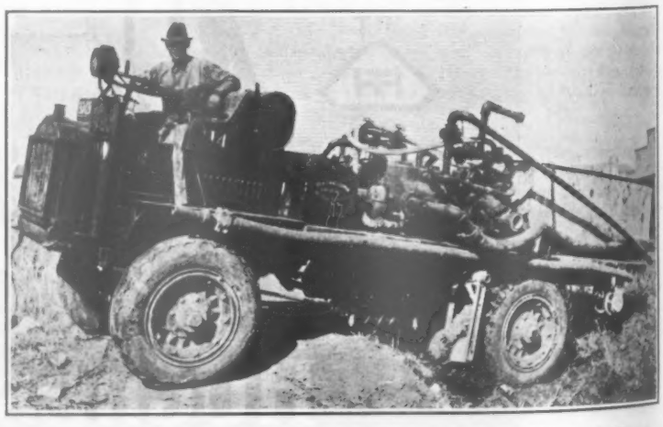
The annual sales conference of the Climax Engineering Co. was held at the company's offices in Clinton, Iowa, recently and was attended not only by members of the company's sales staff, but also by 41 manufacturers, and a large number of others who use Climax engines, according to Edward Crowley, general sales manager of the Climax Engineering Co. There were visitors attending the conference from the Atlantic and Pacific coasts.

G. W. Dulaney, Jr., president of the company, presided at a sales and technical conference, held on the first afternoon of the two-day session, at which several important technical subjects were discussed. The visitors were shown through the modern and well equipped Climax plant.

CLOSE DRILLING INCREASES FIRE HAZARD

Fire is a constant menace in areas of intensive development where wells are closely spaced and all drilling crews are racing for the sand. The above photograph was taken by the Los Angeles representative of the International Derrick & Equipment Co. during the recent disastrous blaze at Santa Fe Springs when thousands of dollars of equipment and rigs went up in smoke with a spectacular flare. The economic advantages of using steel rigs in localities such as this and the decreased fire hazards resulting from the use of steel are graphically portrayed in this picture.

TRACTION OF TANK APPLIED TO TRUCKS



Truck of Halliburton Oil Well Cementing Co. equipped with Truk-Trak device.

A device that promises "immunity from bad roads and soft roadbeds, that laughs at bad weather, a road of steel that takes advantage of good roads and makes the bad stretches passable," is described in a folder published by the Sivyer Steel Casting Co., of Milwaukee, Wis., manufacturers of Truk-Trak.

Truk-Trak is an endless steel belt operating over the rear wheel of a truck and a raised idler. When the truck is operating over good roads, the track is rolled up on a reel fastened to the rear of the truck and is entirely out of the way. When the good road ends, one man in 15 minutes, it is said, can put the track in place on the wheels. The idler over which the track operates is adjustable so that with a full load and new tires it can be set 6 to 7 inches from the ground; with old tires, 5 to 6 inches; and when the truck is empty, 8 to 10 inches. This sets the contact surface on an angle with the roadbed and helps the Truk-Trak to pull out of holes and to climb over obstructions.

It's a Wilson

Just pull the pins to unfasten the links

WILSON SPEED ELEVATORS

are fast workers

They have:
- Big, convenient lug ears
- Easy working pins
- Quick detachable links
- Simple door control
- Famous Wilson latch

They are:
- Perfectly balanced
- Accurately machined
- Safest by every test

At Supply Stores
Write for Catalog

Wilson & Willard Mfg. Co.
MANUFACTURERS

It's a Wilson

Distributed By WILSON OIL TOOLS CORPORATION

SALES OFFICES
Tulsa, Oklahoma
409 Atlas Life Bldg.

Factory and Distributors Office
2301 E. Vernon Ave.
Los Angeles, California, U.S.A.

SALES OFFICES
Fort Worth, Texas,
704 Van Wagoner Bldg.
New York
141 Broadway, Room 1310

NATURAL GAS DEVELOPMENTS

PROGRESS BEING MADE ON CARBON MONOXIDE

Few subjects in the whole range of scientific medicine are better understood now than carbon monoxide asphyxia, says Prof. Yandell Henderson of Yale University in a letter to the New York Times. When even a small amount of this gas is inhaled in the air it unites with the red matter, or hemoglobin, of the blood. It thus renders the blood temporarily incapable of transporting oxygen. If the amount absorbed is large, or the period of its retention is long, serious damage or even death results. If, however, the gas is quickly eliminated, a complete and rapid recovery results. It was formerly believed that carbon monoxide formed a permanent and stable compound in the blood, but modern investigation has demonstrated that just as carbon monoxide displaces oxygen, so in turn oxygen can displace carbon monoxide. The rapidity of the elimination of carbon monoxide depends, therefore, wholly upon the volume of breathing and upon the amount of oxygen contained in the air or other mixture of gases during treatment and recovery. If the amount of carbon monoxide absorbed has not been large, the mere breathing of fresh air is sufficient in the course of an hour or two to cause its elimination. After acute or profound gassing, however, the breathing of air is not sufficient to eliminate the carbon monoxide rapidly enough to prevent serious ill effects. Even the administration of oxygen is only slightly beneficial, for the reason that after severe gassing respiration is so much depressed that the oxygen administered is not inhaled in sufficient amount to drive the carbon monoxide out of the blood with sufficient rapidity.

With this defect of treatment with oxygen in mind, my associate, Dr. H. W. Haggard, and I tried at first in laboratory experiments the effects of adding small amounts of carbon dioxide to the oxygen. Modern physiology, especially through the investigations of Haldane in England, has demonstrated that the normal stimulus to respiration is the carbon dioxide produced in the body. It is carried by the blood to the respiratory center and there stimulates the breathing. The inhalation of a small amount of carbon dioxide in air or in oxygen produces a similar effect upon respiration. By adjusting the amount of carbon dioxide in air or oxygen, any desired volume of breathing can be induced.

In the laboratory we tested this matter first upon animals and then upon ourselves and upon other men. The subjects were gassed with carbon monoxide to the point of complete unconsciousness in the case of animals and to a degree that would have resulted in severe headache and other illness in the human subjects. The mixture of oxygen and 5 per cent carbon dioxide was then administered. A four or fivefold volume of breathing was thus induced drawing the 95 per cent oxygen into the lungs (air contains only 21 per cent of oxygen) with the result that in the course of 15 or 20 minutes most of the carbon monoxide had been displaced from the blood. Subjects which had been entirely unconscious were thus restored to consciousness and self-control. The human subjects, including ourselves, after this treatment escaped entirely the prolonged discomfort which otherwise always follows partial asphyxia.

With the permission and cooperation of the Consolidated Gas Co. of New York suitable inhalers for administering oxygen and 5 per cent carbon dioxide were placed on the emergency trucks of that company and were sent to a sufficient number of cases of asphyxiation in various parts of Manhattan to demonstrate that the results outside the laboratory correspond to those in our experiments.

During the past two years inhalers for the administration of oxygen and carbon dioxide have been widely introduced throughout the country and this treatment has to its credit already the saving of a large number of lives. This treatment has been adopted by a large number of public service corporations in many cities throughout the country, illuminating gas companies, blast furnaces, etc., and it is used not merely to save life but also to effect a quick restoration so that men can go back to work.

GAS OF GRADY COUNTY BEING USED IN TEXAS

OKLAHOMA CITY, Okla., Feb. 14.—Texas gas consumers are now getting more of the natural gas produced in Grady County, Oklahoma, than are Oklahoma consumers, according to gas well owners in the Grady district. The Oklahoma Natural Gas Co. recently contracted to sell gas to the Lone Star Gas Co. of Texas and the latter is receiving gas into its main trunk line through the line in Stephens County that once carried gas from from the Duncan district to Oklahoma City. The average amount of gas taken from wells in that district was estimated at 2 per cent of production. Operators say that since the Lone Star delivery started the amount has increased to 6 or 8 per cent.

Sixty wells in the Grady district are capable of producing 800,000,000 feet daily. The only buyer in the field is the Oklahoma Natural except that a few wells are contracted to the Chickasha Gas & Electric Co.

TEXAS TOWNS OPPOSE PROPOSED GAS RATE

DALLAS, Tex., Feb. 14.—Mayors and city attorneys from 21 Texas towns served by the Municipal Gas Co., distributor for the Lone Star Gas Co., met here to voice opposition to the so-called Cox law and ask for its immediate repeal. Measures calling for repeal of the law have been presented in both houses of the present Legislature.

"The law works a hardship and injustice on all of the towns served by the Municipal Gas Co.," declared Hamp P. Abney of Sherman, chairman of the conference. "The law permits the gas company to increase its rates and to add a ready-to-serve charge of $1 per month on each meter. If the cities refuse to approve rate increases the company can take the case to the District Court at Austin."

ASK RAISE IN SHERMAN, TEX.

The Municipal Gas Co., which serves several cities and towns of north Texas, has applied to the city officials of Sherman, Tex., for a permit to increase rates on natural gas. It seeks principally a right to make a ready-to-serve charge of $1 per month to consumers. The company holds its present income in Sherman is insufficient to pay a 10 per cent return on the investment of $660,000. The gross annual revenue was said to be $76,000 and the cost of operation $62,100.

BUYS CANADIAN NATURAL GAS

The International Utilities Corp. has acquired control of the Canadian Western Natural Gas, Light, Heat & Power Co., Ltd., one of the largest natural gas companies of Canada. The acquired company serves Calgary and surrounding towns in Alberta. The Canadian company is the sixth public utility property to be taken over by the International Utilities Corp. within the last few months.

THINK HELIUM FIND IN REAGAN GASSER

FORT WORTH, Tex., Feb. 14.—The Big Lake Oil Co.'s No. 17, a direct west offset to Texon 3 Group 1, striking the shallow gas and oil sand at the 2,440-foot level, blew in and has been estimated by oil men to be making from 40,000,000 to 50,000,000 feet of gas. There was a fire in the boilers and on the derrick floor but nothing caught fire. Some are of the opinion this gas has a large helium content and it will be several days before reports from laboratory tests will be available.

The well can be heard for 5 or 6 miles. The Texon Co. found this pay about 14 feet lower than the Big Lake, and it has been the opinion this upper pay would eventually be found to produce in paying quantities. On account of about 1,000 pounds pressure it is thought much difficulty will be encountered in attempting to bring the well under control. It is possible the well will bridge itself, being in a shale formation. The drilling line is whipping itself around in the casing and is expected to part. This would cause the tools to drop back in the hole, probably never to be recovered. The line and tools have been forced back up in the hole and the line probably will have to be cut before any work can be done.

BIG CEMENT GASSER STARTS NEW ACTIVITY

CHICKASHA, Okla., Feb. 14.—With the bringing in of the biggest gas well completed in the Cement Field for years and with new wells starting both in the Cement and Farwell areas, activity over the Chickasha district has increased.

The well was brought in by the English Drilling Co. in the southeast of the northwest of Section 32-6n-9w, and is good for 18,000,000 feet a day. It was completed slightly below 2,200 feet.

With the completion of this well, it is announced the English Drilling Co. is preparing to drill the deepest test in the Cement Field. These reports state the well to be drilled in Section 32-6n-9w is scheduled for a depth of 4,200 feet if necessary.

It is proposed to drill to 3,000 feet with a rotary outfit and will then standardize and continue to 4,200 feet if necessary to make a thorough test of the extremely deep levels. A special derrick, capable of carrying the extreme weight necessary to a test of that depth, is to be constructed and work on it is to start in a few days.

The entire district has been waiting for a test of this depth as it has been believed the big oil, from which it is believed the Cement Field is being fed, will be found at an extreme depth. It is said that in this section the Cement Oil Co. some time ago drilled to a depth of nearly 3,900 feet and reported a sand 67 feet in thickness between 3,800 and 3,900 feet. The hole was lost when it was necessary to reduce it to such an extent that the well could not be properly finished.

Hall and Briscoe, Chickasha operators, are extending their development in the Cement area. They are moving in tools for a well in northeast of the northwest of Section 6-5n-9w, in which section they now have two producers. Drilling is expected to be started there within the week.

In the southern edge of the Chickasha gas field, Briscoe and Nelson are drilling at 1,960 feet on a well they hope to complete in the second sand level. They expect to set casing at 2,100 feet and finish the well in the Ramsey sand, which has been carried in other wells to nearly 2,500 feet. The well is in the southeast of the southwest of Section 11-4n-8w.

Briscoe and Nelson have made a location in the center of the northeast of the southwest of Section 2-4n-8w on the Lee farm and will move tools there when they complete their well in Section 11-4n-8w. The Magnolia is drilling at 1,516 feet in its well in the southeast of the southwest of Section 25-5n-8w. They expect to complete the well in the Ramsey sand.

MONROE GAS OUTPUT IS 289 BILLION FEET

SHREVEPORT, La., Feb. 14.—A total of 289,059,952,000 feet of natural gas was metered in the Monroe gas field for the period of February 28, 1921 to January 1, 1925, according to a report issued by W. J. Everett, commissioner of conservation.

At a nominal value of 3 cents per thousand feet at the well, this would show that the Monroe gas field in Ouachita, Morehouse and Union parishes, has brought in a natural mineral product with a value, at a conservative figure of $8,671,708.06, the conservation head said.

The tabulation made at Monroe by R. P. Webb, inspector for the division of minerals, which included the metered gas severed from every producing well in the northern gas field, showed a consistent gain, in most instances, during the years of production since meters were installed by the State and does not show the gas produced from old wells before meters were installed, nor does it show pipe line and underground loss, nor the amount of gas by-passed and taken by other devices.

The average production of the wells in the Monroe gas field, the commissioner pointed out, is from 30,000 to 40,000 feet, while a number of wells in different sections of the field showed a remarkable flow of gas. One of the wells, known as No. 1 Guthrie, owned by the United Oil & Gas Co., showed the record production of 8,029,541,000 feet and, if valued only at 3 cents per 1,000 feet, $240,886 worth of the product which was used in making carbon black was the result.

This well was a constant producer the records of the department show; in 1921 it produced 1,080,686,000 feet; in 1922, 2,218,065,000 feet; in 1923, 2,193,393,000 feet, and in 1924, 2,537,397,000 feet.

The second well was the Ouachita Oil & Natural Gas Co.'s No. 2 Smith, which produced in four years 6,863,016,000 feet. The third was the No. 1 Leiber, owned by the same company, which had 5,704,523,000 feet to its credit during the time gas has been metered by the State.

The complete tabulation indicates that 335 natural gas wells participated in the grand total of over 289,000,000,000 feet.

Commissioner Everett stated proper regulations to curb the output of natural gas in the making of carbon would be issued within a few days and that the series of conferences he has been holding with the carbon gas manufacturers and other users of natural gas, indicated there would be no protests on the safeguards the department of conservation would throw about this big and economically important gas field.

GAS FOR EASTERN PANHANDLE

OKLAHOMA CITY, Okla., Feb. 14.—It is reported that the Guffey & Gillespie interests of Pittsburgh, Pa., have become interested in propositions dealing with the distribution of natural gas in the eastern area of Texas Panhandle. E. P. Hammitt, who is said to represent these interests, joined Roy A. Schneck, owner of the gas well near Shamrock, Tex., in applying for a gas contract at Childress, Tex., recently. Gas was promised to the town by September 1 if a distributing arrangement is made.

Tubing Spider

SUPPLY
BOVAIRD
COMPANY

Headquarters
TULSA, OKLA.

Stores:
Sapulpa, Okla.
Beggs, Okla.
Slick, Okla.
Lyman, Okla.
Okemah, Okla.
Bristow, Okla.
Stroud, Okla.
Independence, Kansas

Krell Patent

Again Bovaird Meets the Need

As in the Casing Elevator and Spider, Bovaird has met the needs of a new day in the oil industry with this Tubing Spider.

In the day of shallow wells, the improvement as found in the Bovaird Tubing Spider, was not badly needed, but it is indispensable now when many wells are approaching a mile in depth and tubing operations have grown more difficult and increasingly hazardous. It is impossible to handle tubing with safety and speed by the old devices. This condition called for better and safer equipment—and Bovaird supplied it.

We will be glad to send you literature describing this new device which has made tubing operations so much quicker and safer.

BOVAIRD

36"
Transit Pumps

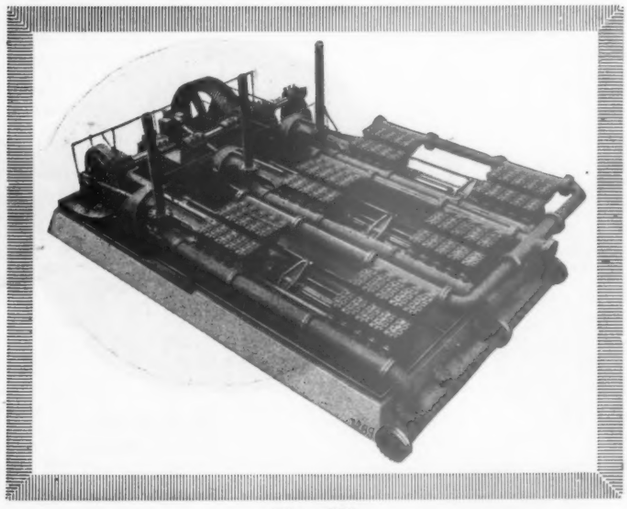


Fig. 1289
6½ x 36" Horizontal Triplex Power Pump. Pumps 1670 barrels per hour against 900 lbs. line pressure.

Long Stroke *means* Long Life

Overcoming the inertia of the rods and pistons, and the fluid, at the end of each stroke consumes power and increases the wear and tear of all moving parts. The solution is to use slow moving, long stroke pumps, especially on heavy work.

Ask for description and prints of this pump.....

NATIONAL TRANSIT
PUMP & MACHINE CO.
Oil City, Pa.

District Offices: New York Pittsburgh Philadelphia Cleveland Tulsa Denver Houston

SCIENTISTS AID TO PETROLEUM ENGINEER

(Continued from Page 54)

neither been added or subtracted from the system. Where does this gain of energy now reside? Obviously, there must be an increase in the intrinsic energy possessed by the gas because it could not have left the system nor could it have been destroyed or annihilated.

Let U′ represent the intrinsic energy possessed by the gas on the high pressure side, and U″ represent that of the gas when it has arrived on the low pressure side. Then the gain in intrinsic energy may be expressed thus:

Intrinsic Energy Gained = U″ − U′

We may therefore write:

$$P'V' - P''V'' = U'' - U'$$

and transposing the terms, we have:

$$P'V' + U' = P''V'' + U''$$

That is; in general, on both sides of the plug we have the same value for the expression (PV+P). The value of the sum of the two quantities does not change when the pressure decreases and the volume increases. So;

$$PV + U = K$$

If the laws of Boyle and Joule hold good, then (PV+U) will depend upon temperature and will not at all depend upon pressure and volume. But (PV+U) is shown to be constant whether the gas laws are obeyed or not. If they are obeyed, then temperature must be constant. Any change of temperature must be due to either one or both of the laws breaking down.

Assuming that the formations adjoining a porous medium containing productive fluids are perfect nonconductors of heat, then the fluids, whatever their nature may be, arrive at the orifice from any distance with a total amount of energy equal to that with which they started. If such adjoining formations are conductors of heat, the Joule-Thompson effect caused by the presence of vapors and other imperfect gases tends to draw a supply of heat from these formations and the fluids arrive at the orifice possessing a greater total energy than that which they possessed at their starting point within the reservoir.

Retains Total Energy

Heat produced by friction as the fluid moves toward the orifice is again in U at the expense of PV. Such heat will cause a rise in temperature which will tend to offset an inflow of heat from the adjoining formations in case these are conductors. In no case, however, can the fluid arrive with less total energy than that with which it started, unless production takes place at a sufficiently rapid rate so that the rise in temperature from the Joule-Thompson effect, and such heat excess is drawn off by the conducting formations as the fluid moves along its path. This seems unlikely ever to happen in our oil and gas fields for two reasons:

(a) Adjoining formations are poor conductors of heat.

(b) Lineal velocity of movement of fluid in underground reservoirs is only excessive within a short radius of the well.

The question is left open to discussion.

162. As far as the above principles are concerned, the reservoir may contain only a gas which moves toward the orifice, or it may contain a gas which must drive a liquid toward such orifice. There is no difference between them except that in the latter, PV has lost a greater amount in favor of U by friction of the moving liquid. By the principles of mechanics the same reasoning holds for reservoirs which are capable of producing liquid without gas.

The energy required to move a fluid to the orifice only lessens the reservoir's capacity to do external work so far as the PV factor above is concerned and this, as we shall see under the topic of Thermodynamics, pertains only to the "closed type" reservoir. The "open type" reservoir is acting independently of PV losses within the porous medium.

Whereas the primary functions of fluid delivery may be studied without the specific consideration of Joule's Law, the secondary functions require it.

Laws of Capillarity

163. Surface tension and capillarity were discussed briefly in Articles 111 and 112. It was there pointed out that surface tension is a force acting tangentially to the free surface of the liquid. A single force can have no component perpendicular to it. Capillarity is a phenomenon due to the combined action of surface tension and adsorption forces. These two forces are acting at an angle with each other and consequently their resultant must be equivalent to a single force acting at some angle with the tangent drawn at the free surface. The resultant force may be arbitrarily resolved into two components, one of which has a direction perpendicular to the free surface and the other in a direction parallel to it. The former component is that which causes liquid in a capillary tube to run up or down, contrary to the action of gravity.

An old problem presented to scientists long ago still remains unsolved. How can the sap of tall trees reach heights obviously above the "head in feet" equivalent to atmospheric pressure? If the sap possessed a specific gravity of unity, (equal to water) it would appear that it should be unable to rise to heights greater than 33.9 feet; yet many of our trees exceed that height. The problem was early presumed to be one concerning capillarity, inasmuch as the cellular tissue of the tree appears as a bundle of capillary tubes. The head in feet represents the distance through which the perfect vacuum should raise a given liquid above its normal surface. Since the sap moves to greater heights, it is evident that the function of the vacuum, if it acts at all, is not acting alone. It was during the course of an investigation on this question that Jamin* made an interesting discovery relating to the behavior of globules of liquid in capillary tubes.

The account of Jamin's experiments, as told by himself, appears in the Comptes Rendus of the French Academy of Science, Volume 50, January-June, 1860, page 172 et. seq. We shall consider the full and literal translation of such paragraphs which have an important bearing upon our problem. For convenience, Jamin's account is divided into three sections, according to the three types of apparatus he used in his experimentation.

First Experiment
Capillary Tube With Constant Diameter Bore

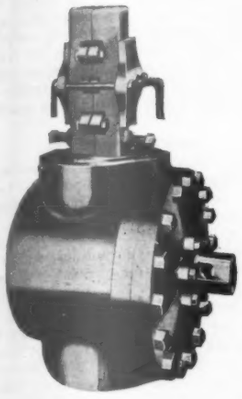
164. "If a capillary tube be taken, of one meter length more or less, and one of its ends be placed into communication with a vessel containing a vacuum, there will be a current of air passing through the tube from the atmosphere to the vessel. Then, if the finger with a wet cloth attached be placed at the free end of the tube, touching and held apart from such end alternately, many times and at equal intervals, it will be noted that globules of water, separated by bubbles of air, will traverse the tube. ..... The apparatus prepared in this manner possesses very peculiar properties.

165. "When a pressure is exerted on one end of the (detached) tube, the first globule advances considerably but the following one moves less and the last globule remains immobile. If the pressure exerted is P, the movement transmitted to the globules affects a definite number of globules, m; if such pressure is 2P, the perceptible movement extends over a number 2m. In general, the effect of the pressure will be noted over a number proportional to such pressure. Consequently, the opposite end of the tube will not be affected until such a time when the difference of pressures existing on the two ends of the tube reaches a point proportional to the number of globules in the tube and this point extends indefinitely. With a very fine capillary tube I have been able to exert a pressure of three atmospheres on one of its extremities and maintain the same during 15 days without detecting the slightest change in the tube with its globules.

166. "Inversely, if a partial vacuum is applied at one end of the tube, the first

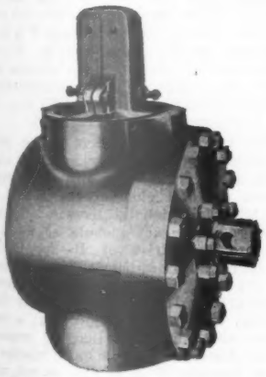
*Jules Celestin Jamin, French physicist, 1818-1886. Experiments date 1860.

Standard Equipment



Improved Double Roller Oil Saver in Screwed Type Control Head. (Patented)

Improved Double Roller Oil Saver (Patented)



The Roller Oil Saver in the Control Casing Head. (Patented)

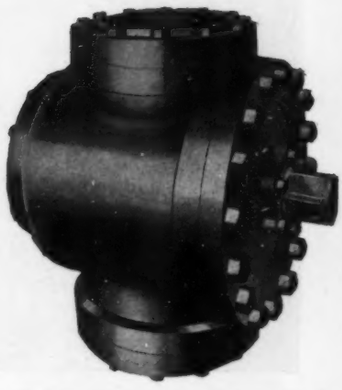
Great waste would result were it not for these devices that make possible the control of any size well.

The Improved Double Roller Oil Saver permits the changing of rubbers on wells of highest pressure without the loss of oil or stopping of drilling operations. It is this company's latest improvement.

The Control Casing Heads have been of untold value to oil producers throughout the world.

Both the regular **Roller Oil Saver,** as well as the new **Improved Double Roller Oil Saver,** fits into the Common Casing Heads and into the straight type of Control Casing Heads. They can be put on without drawing the tools or cutting the line.

All Standard Equipment is made of Semi-Steel in sizes ranging from 4¼ to 12½ inches and are carried in stock by all supply dealers.



The Flange Type of Control Casing Head. (Patented)

The Roller Oil Saver in the Common Casing Head. (Berry Type.) (Patented)

The Roller Oil Saver in the Tee Casing Head. (Berry Type.) (Patented)

THE OIL WELL IMPROVEMENTS CO.
Tulsa, Okla.

ENGINEERS & CONTRACTORS
IN NATURAL GAS AND OIL

Cutting Down the Non-Productive Time

The capital required for a construction operation is idle and non-productive during the period between start and finish.

Hope experience and resources reduce this non-productive time to "the irreducible minimum"—because the Hope construction force is always ready with personnel and equipment, which Hope specialized experience makes 100% effective.

Avail yourself of Hope Service—which carries with it Unit Responsibility—and your capital invested in extensions or improvements will begin to pay earnings in the least possible time.

HOPE SERVICE

Engineering counsel, design construction and contracting—in pipe lines for oil and gas, oil pumping stations, gas compressing and boosting plants, gasoline recovery systems, city and intercity gas mains.

UNIT RESPONSIBILITY

ENGINEERS CONTRACTORS
HOPE Engineering & Supply COMPANY
DESIGNERS MANUFACTURERS
MT. VERNON, OHIO, U. S. A.

air bubble expands considerably, the next one less, and so on, the last ones remaining in repose as long as the diminution of the pressure has not reached the limit proportional to the number of globules. For the purpose of experiment, a long tube containing a great number of globules and bubbles was attached to the upper end of a mercury column, and it was noted that the mercury maintained its level to the same absolute degree as though the upper extremity were maintained absolutely sealed.

167. "These experiments show that the pressure exerted at one end of the tube diminishes by successive steps, each step a constant quantity for each bubble of air, a phenomenon easy to explain.

168. "It is probable, to be exact, that the first action of the pressure P is to hollow out the anterior surface of the first globule of water and increase the radius of curvature of the posterior meniscus. The difference increases little by little to a maximum point consequently, the globule offers a resistance which increases up to a limit which we will designate by P. At this point the globule transmits to the bubble immediately following, a pressure of P—p. The same action takes place with the second bubble of P—2p; thus successively up to the last globule which transmits a pressure of P—np. If this pressure is equal to the pressure of the atmosphere, a state of equilibrium exists.

"Developing this idea it can be consequently shown that a string of gloubles can assume an infinite number of positions of equilibrium, and the conditions of any one of the positions can be calculated, experiment verifying the results of such calculations. .....

169. "I have made experiments for measuring the value of the resistance limit p which one globule alone can sustain against the pressure. I have found that the resistance is independent of the length of the globule. ..... Mercury produces effects of much greater intensity. ..... Oil and alcohol. ....."

Second Experiment
Capillary Tube With "Contractions and Dilations"

170. "When the capillary canal, in place of being cylindrical, is a succession of contractions and dilations, it possesses properties even more curious. After it has been wetted on the inside, some of the liquid adheres, forming a cover to the walls of the canal and such liquid remaining soon collects at the contractions and produces spontaneously an interrupted string of globules. It is easily noted that the present form increases in a surprising manner the properties which we have just taken account of with the cylindrical canal. A tube with eight contractions * * * was sufficient to hermetically close the upper end of a barometric column and even offset a pressure of two atmospheres.

171. "If such a tube be completely filled with water and pressure be applied at one of its extremities, movement takes place without any difficulty, but if such pressure be transmitted by compressed gas, allowing such gas to replace the water in the compartments one after another, globules will be left at each contraction. These, offering a resistance which increases with their number, will finally offset the pressure.

"Inversely, when the canal is full of air and water is forced in by applying pressure, such water successively fills the compartments, destroying the globules and annuling their previous resistance; finally filling the entire canal, allowing easy filtration."

Third Experiment
Porous Bodies

172. "These results may be applied to porous bodies in which it must be admitted that there are canals alternately of contractions and dilations. When the porous cup of an electric battery, or a porous clay water jar, or a vessel made of plaster of paris or any other hollow vessel of porous material be filled with water, any pressure applied to the surface of the water will cause filtration to the exterior to take place, while, on the contrary, any amount of vacuum can be applied to the interior of the vessel without succeeding in causing any of the atmospheric air to pass through the wet porous walls.

173. "When the vessel filled with water is itself submerged (in a bath of water) and a pressure is applied to the interior by means of compressed air, such air commences to force out the water, but when this has passed, the air will not filter through at the same pressure; it being possible to increase the pressure to two, three, or in some cases to four atmospheres without observing the smallest bubble passing the walls. This pressure can be maintained indefinitely, the whole behaving exactly as though the walls contained no capillary pores."

Jamin's Experiments

174. Was Jamin not experimenting with pressures against opposing forces which can well be designated capillary resistance?

Is it in the least illogical to suppose that the porous formation capable of producing oil, water and gas is a bundle of capillary tubes radiating in all directions from the well?

Do we not acknowledge the fact that gas, when present, will pass out of solution to the free state upon release of pressure within the reservoir, forming "bubbles" between "globules" of liquid?

Does it not seem reasonable to assume that capillary canals within a porous formation have the form described as "contractions and dilations" at least to some degree?

It is a simple matter to answer these questions, perhaps, without further consideration, but it may not be safe to do so. We must have evidence in collaboration and the rigorously scientific manner of obtaining this evidence is through mathematical analysis.

175. A capillary tube prepared in accordance with Article 164 may be represented by diagram as in Figure 175 (a). That in accordance with Article 170 is represented in an ideal form in Figure 175 (b). The globules of water are shaded and are separated by air spaces. P represents the pressure exerted at the free end of the tube; it is the atmospheric pressure when the vacuum is attached at the other end. According to Jamin's account, the number of globules affected by the pressure P is proportional to the intensity of P. If the globules are spaced equally along the tube; i.e., the tube is filled in a homogeneous manner, the distance R affected by the pressure P is proportional to the intensity of P. P has absolutely no influence upon globules beyond R. Consider the corresponding pressure diagram of Figure 175 (c). It is drawn according to Article 168.

The menisci of the first globule offer a resistance of the value p, small but real. Then P—p is the intensity of pressure behind the first globule; the menisci of the following globules likewise offer resistance p for each globule, so we have pressure intensities of P—2p, P—3p P—4p, etc., behind the successive globules Finally the pressure P—np is encountered at some distance R from the first globule, and there P—np=zero; a condition which indicates that the pressure at the distance R is the same whether a given pressure P is applied or not, and that it is the same as the pressure which would exist in front of the first globule without P being applied.

The distance R depends upon several factors:

(a) The intensity of pressure P.
(b) The relative proportion of gas to liquid; in other words, the number of globules presenting menisci per unit of length along the tube.
(c) The intensity of pressure p for each globule; i.e., the value of the surface tension and adsorption forces for the particular liquid, gas, and material of the tube.
(d) The shape or "texture" of any contractions and dilations present; particularly the contour of the contraction ends posterior to the point of application of the pressure P.

Capillary tubes may be readily imag-

DO NOT BLOW UP OR FALL DOWN

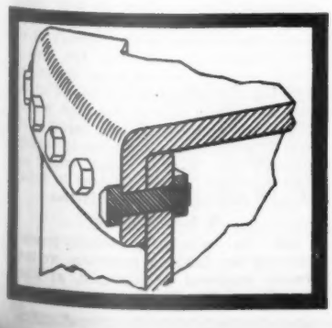
Gantz Tanks will not blow up or fall down because our design is right.

Gantz Tanks are the only tanks made which have all the bolts in shear stress and not a single bolt in tensile. (A bolt in shear stress is 1¾ times as strong as a bolt in tensile stress, according to exhaustive stress tests made by the A. S. C. E.) Gantz Tanks are the only ones that can be made like this as our design is patented.

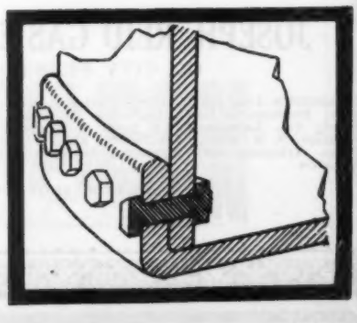
Armco Ingot Iron which goes into Gantz Tanks lasts so long that some of our customers think it is almost everlasting and express great surprise when we must replace a bottom, whereas other tank bottoms are replaced as a matter of course.

At least two paint companies from whom we have not bought and to whom we submitted samples of the paint we use on Gantz Tanks, have admitted that we use better paint than is used on any other bolted tank they know about.

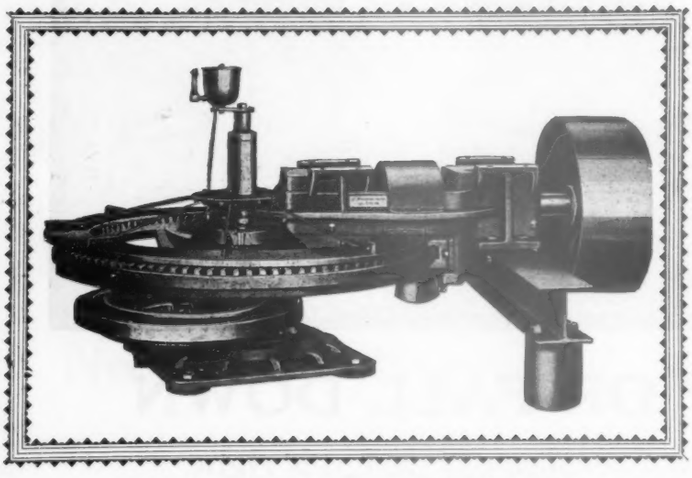
May we send you literature?



GANTZ TANK CO.
ARMCO
Bolted and Welded Tanks
SAPULPA, OKLA.



The Reid Underpull Geared Power



The power illustrated above is our New Type PG Underpull Geared Power with one eccentric. This power is the same as the two eccentric type but having but one eccentric.

THE lubricating system of a pumping power is important and must be efficient if the best service is to be expected from the power.

The oiling system on the Underpull Geared Power is very efficient. Lubrication for the two drive shaft bearings is furnished by ring oilers, one for each bearing, which keep the bearing operating in a flood of oil. A large oil tight reservoir is incorporated in each bearing box.

The gear and eccentric hubs are oiled by a gravity system. Oil is fed from an oil bowl on top of the shaft to an oil ring on the main gear hub, the quantity of oil being regulated by a pet cock. The lubricant flows down along the shaft, lubricating the gear and eccentric hubs. Leads also conduct oil to the eccentric rings.

The gear and pinion are lubricated by grease or heavy oil, a ring cast around the outside of the gear preventing the grease from falling to the floor.

Sheet metal guards provide protection for both the gear and pinion teeth.

With the oiling system used on this power, sufficient oil being supplied, there should be very little wear on the bearing surfaces. If wear does occur, however, the drive shaft bearings and gear and eccentric hubs are bronze bushed and these bushings can be easily replaced. This is an important feature as it is not necessary to go to the bother and expense of rebabbitting bearings.

Write for our new Bulletin No. 29

It contains a complete description of this power

JOSEPH REID GAS ENGINE COMPANY

OIL CITY, PENNSYLVANIA, U. S. A.

BRANCHES AND AGENCIES: Marietta, Ohio; Logan, Ohio; Newark, Ohio; Ft. Recovery, Ohio; Shreveport, La.; Charleston, W. Va.; R. B. Moore, Bolivar, N. Y.; Bradford Supply Co., Robinson, Ill.; Frick & Lindsay Co., Bradford, Pa., and Kentucky Distributors; S. R. Shoup, 706 Pacific Electric Bldg., Los Angeles, Cal.; Oklahoma, Kansas, Texas, Arkansas and Wyoming, Frick-Reid Supply Company, Tulsa, Oklahoma, and Branches.

BRANCH SHOP, TULSA, OKLA.

ined wherein the distance R is less than 1 inch or more than 1 mile.

Capillary Canals

176. If a great number of capillary canals are placed in positions radiating from the single point in all directions lying in a plane, and their ends sealed into a communicating hollow chamber, the distance R represents the radius of action for a pressure P applied to such chamber. The area of action is circular if all canals are alike; i.e., if they are homogeneous in all respects. If such a system of canals is not homogeneous in all directions, then there is an average radius for the action of the pressure P. This average radius describes a perfect circle, the area of which is exactly equal to the actual irregular area of action.

177. The detail of the menisci presented by the globule of water in the first and second experiments is shown in Figure 177. In (a) is represented a globule in a cylindrical bore. When no pressure P is applied, the menisci are in equilibrium as at ac and bd. The radii of curvature are equal in length and are both said to be positive in direction with respect to the globule.

The application of P shortens the radius of ac and lengthens that of bd. In this condition the globule offers resistance to the pressure P which gradually increases as the radii alter, taking on a maximum value of p. The globule then slides to some position a'b'c'd'.

Figure 177 (b) represents a contraction with the portions of adjoining dilations: the drawing is idealized. Here the same action takes place regarding the globule except that it is not free to slide along indefinitely. The posterior meniscus not only lengthens the radius to infinity, becoming a plane surface, but "overhangs" the edge b'd' with a negative radius of curvature. In this condition the resistance of one globule p is considerably greater than in the preceding case, given the same substances and the same size capillary canal. When this maximum resistance is exceeded by the action of P, the globule "breaks" and "makes" again after a quantity of gas has passed the contraction. This making and breaking of the globule may take place slowly or rapidly throughout short or long periods of time.

Units of Pressure

178. Article 169 needs consideration. We are not interested in the absolute value of the pressure p for any particular set of conditions, so far as the scope of the present treatise is concerned. We are, however, deeply interested in the relative distances affected by a unit of the pressure P as between one system of radiating capillary canals and another which is separated either vertically or laterally from it. Obviously, relative distances within the same homogeneous field of action bear unit ratio. (This provides a mathematical foundation to Lewis and Beal's "Law of Equal Expectation" in fields where delivery is under control of capillarity. When the ratio is not unity, a knowledge of the value of the ratio will permit the extension of the law to all fields of this class with the same accuracy now holding for one field.)

Jamin's test with oil and alcohol were unsuccessful. The maximum value of p which one globule of these liquids can exert is small compared with that of water, consequently his values of P applied to the short tube were excessive. The test may be successfully performed by using longer tubes with more globules and by diminishing the pressure P.

179. Our interest in Jamin Capillary Tubes concerns them principally as they lie horizontally, or nearly so, although we shall have occasion to consider inclined tubes in a few instances.

The experiment as performed by Jamin provided a string of globules and bubbles wherein the latter were of gas (air) at atmospheric pressure. Thereupon the tests were made with a pressure P exceeding atmospheric pressure or, by applying a vacuum, P was reduced to a pressure less than that of the atmosphere. The range of vacuum pressures is, of course, limited ultimately to its total amount and in ordinary practice to approximately two-thirds of its amount.

180. Imagine the tube filled with bubbles under a pressure of, say, 100 pounds per square inch throughout. Now the pressure P may be represented by any amount less than 100 pounds. The tube immediately begins to "produce." The closed-in pressure of the tube at the start is 100 pounds and the constant back pressure is given a value of P. After a sufficient length of time, equilibrium is established within the "reservoir." What are the conditions of equilibrium within the tube?

At some distance R from the point of application P the original pressure of 100 pounds remains undisturbed. In front of the end globule the bubble is in equilibrium at a pressure of 100−p; in front of the second globule, 100−2p; then in succession, 100−3p; 100−4p, etc, until finally, in front of the nth bubble (where P is applied), 100−np=P. Any reduction in P now increases R: it sets up another condition in equilibrium and the tube begins again to produce. A different mathematical reservoir is established by the alteration of the constant back pressure. In any given system of Jamin Tubes, R is directly proportional to the potential pressure as calculated from the given value of P and the original closed-in pressure.

The Jamin Capillary Tube is selected as the type "reservoir" of the Capillary Control. (Article 81 et. seq.)

Tests made upon pressure-volume relations as production takes place are obviously experiments in potential phase.

The Jamin Law

181. The mathematics of the Jamin Capillary Tube provide a foundation for our calculations on oil, gas and water reservoirs of Capillary Control. Pressure-volume relations will be determined by the processes of calculus when we discuss the details of this control. (See Articles 118, 119, 131 (e.) All will be carefully compared with results obtained from actual experiments so as to remove any doubt which may exist concerning the phenomena of this class of reservoir.

In honor of the man who made the interesting discovery respecting the properties of capillary tubes; a discovery which is of great importance to us in the economic recovery of fluids from any of our valuable natural reservoirs, we shall take the second equation of Article 81, paragraph (e); to wit, $Vo=KP^2$, phrase it in words and designate the expression, "The Jamin Law." Thus:

"The potential volume recoverable from a reservoir under Capillary Control is proportional to the square of the potential pressure at the orifice."

The Jamin Action and the Jamin Effect

182. The peculiar properties of the Jamin Tube are not confined to reservoirs wherein capillary controls the laws of delivery. A given reservoir with fluids and porous medium may possess so great a pressure within that, so far as laws of delivery are concerned, they are the same as they would be in the same reservoir were there no porous medium. Time functions would naturally be of different duration but they would not be expressed differently in mathematical equations.

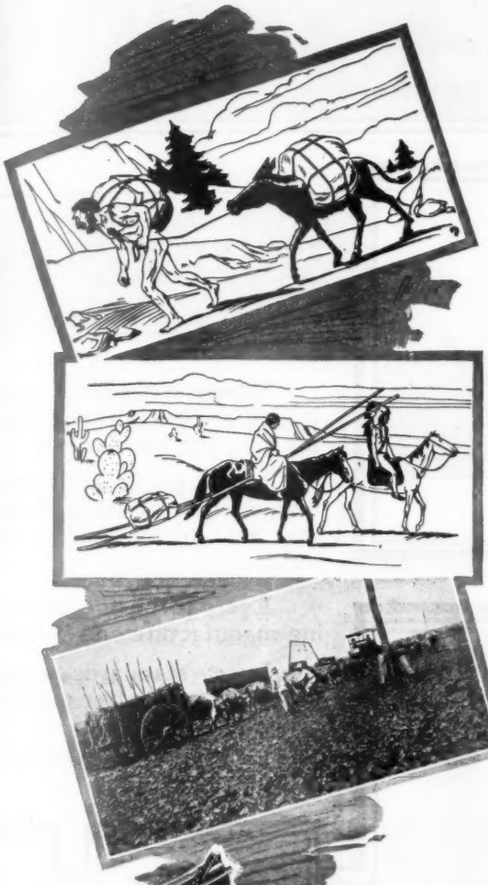
Thus reservoirs of Hydraulic and Volumetric Control are frequently filled with porous material yet the laws are the same as though they were hollow.

Nevertheless, all reservoirs which contain porous material are subject to the action of Jamin's Tubes in their Secondary Functions of delivery. It is of economic importance in the recovery of the fluid, mainly in affecting the rate at which recovery can be made, the proportional gas production per barrel of oil, the by-passing of the gas, the proportional water production per barrel of oil, etc. We shall have occasion to consider seriously the "Jamin Action" within our reservoirs and learn best how to handle "Jamin Effects" upon production.

A New Theorem

183. In calculating velocity-pressure relations for fluids in reservoirs, we have always supposed or assumed, at least, that Torricelli's Theorem was universal

Haul In The 20th Century Way



The primeval man laboriously plodded through mud with his pack on his back or led a beast of burden. He expended much effort but accomplished little.

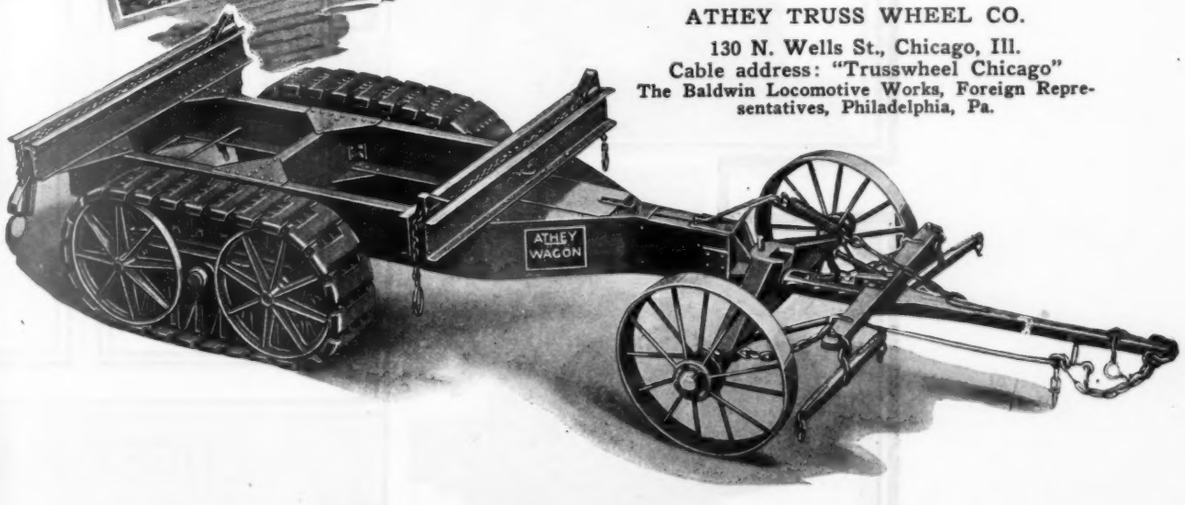
The American Indian lashed two long poles to his pony's back and let the rear ends drag on the ground, carrying his load in the middle. This gave greater capacity but developed much friction.

Then some ancient genius put round wheels under his freight. On hard ground, this was a big improvement but round wheels bog down and mire in mud or soft ground.

The modern manager carries his freight on Athey Truss Wheel Wagons. No matter how soft the going, the broad track band lays a never-ending steel highway over which travel the wheels that carry the load. The load is evenly spread over the large track area constantly in contact with the ground. Consequently Athey Wagons are non-miring and, due to the construction of the band, will carry capacity 10-ton loads with 50% less motive power wherever animals or tractors can work.

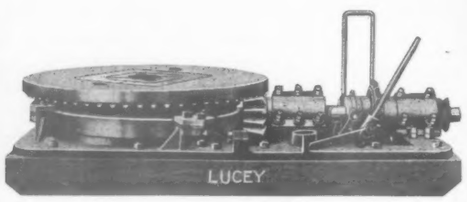
Haul your freight the 20th Century way—with Athey Wagons. 10-ton capacity. Let us send you further information.

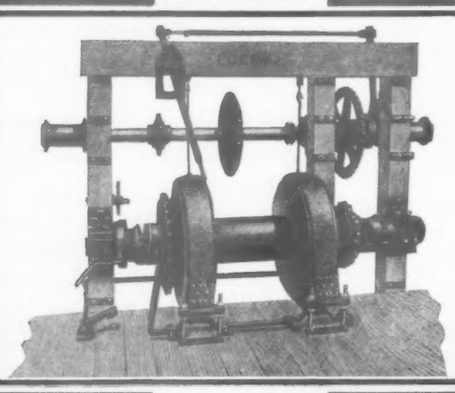
ATHEY TRUSS WHEEL CO.
130 N. Wells St., Chicago, Ill.
Cable address: "Trusswheel Chicago"
The Baldwin Locomotive Works, Foreign Representatives, Philadelphia, Pa.

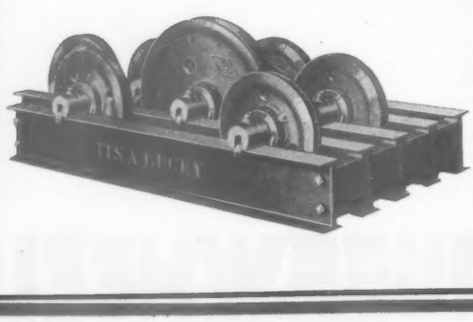


ATHEY TRUSS WHEEL WAGON
IT BRIDGES THE SOFT SPOTS

LUCEY ROTARY







WHEREVER

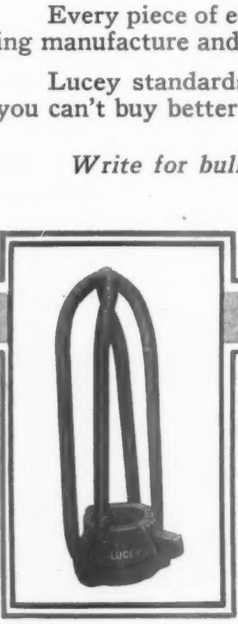
When you purchase any piece of r equipmen it, you are buying what we honestly bel to be the kind on the market.

Lucey Engineers,—progressive men years of manufacture of oil well machinery, are tantly on t that will enable Lucey products to de unequaled service.

Every piece of equipment is made of ted materi ing manufacture and before leaving the p subjecte

Lucey standards of workmanship a rformanc you can't buy better outfits for rotary s

Write for bulletin describing the ment in v



LUCEY MANUFA ING

CHATTA , TE

Export Department: Wo Bldg.,

DRILLING OUTFITS

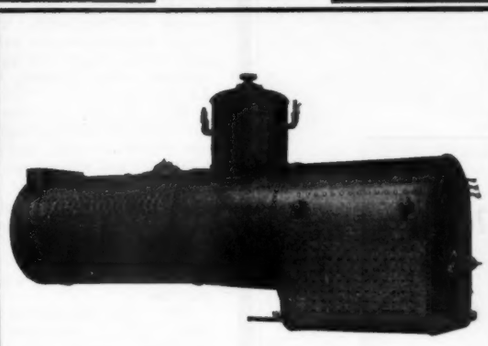
THERE'S OIL

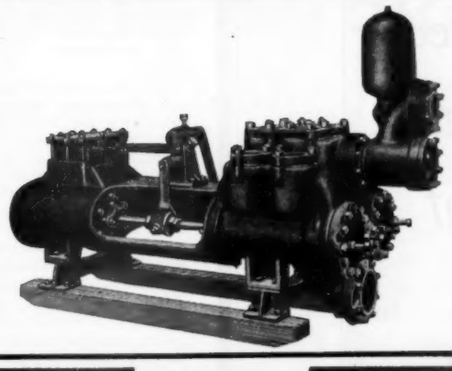
equipment with the name "Lucey" on
o be the best piece of equipment of its

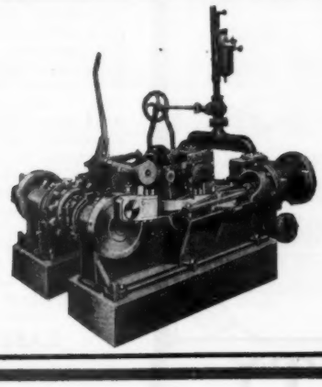
years of experience in the design and
antly on the alert making improvements
unequaled performance in actual field

ed materials,—carefully supervised dur-
s subjected to strict inspection and tests.
rformance today are the very highest—

ment in which you are interested.



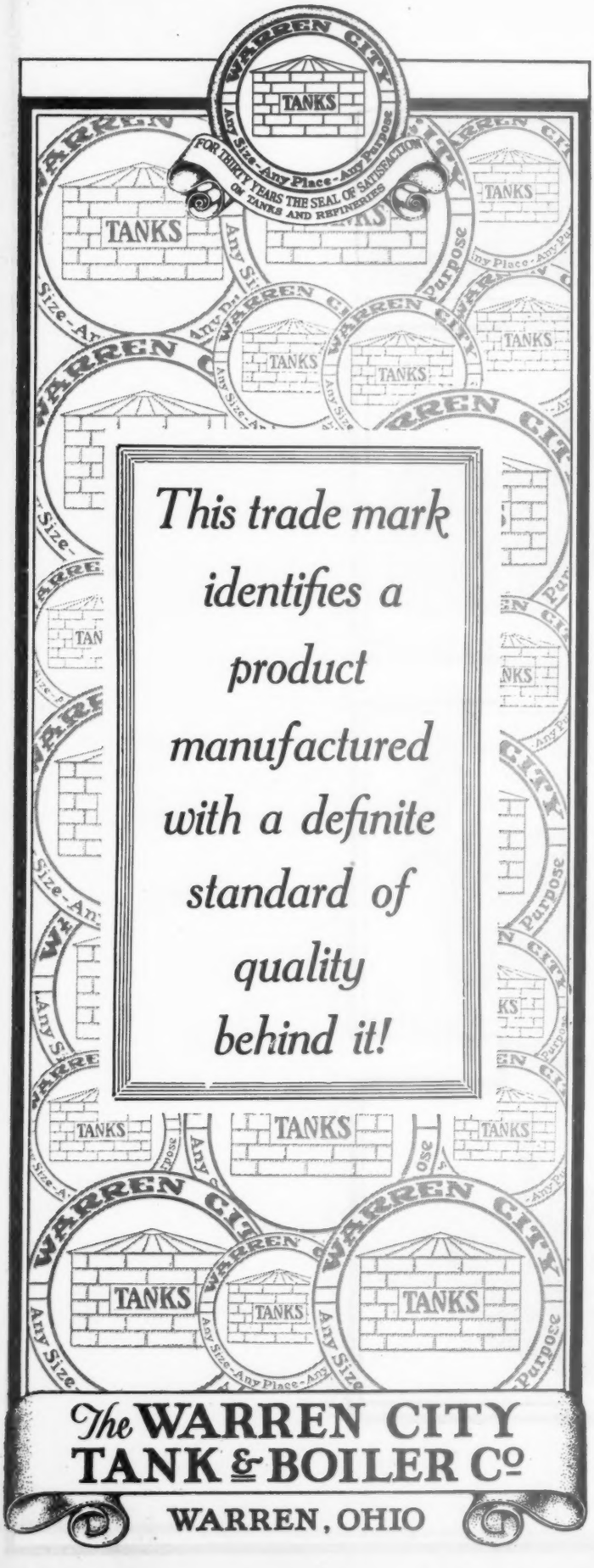




ING CORPORATION

, TENN.

Bldg., New York City


WARREN CITY
TANKS
Any Size - Any Place - Any Purpose
FOR THIRTY YEARS THE SEAL OF SATISFACTION ON TANKS AND REFINERIES
This trade mark identifies a product manufactured with a definite standard of quality behind it!
The WARREN CITY TANK & BOILER Co
WARREN, OHIO

in application. Let us take two equations as given in Article 80:

$$P = KT^2$$

and

$$Ve = KT$$

Take the square root of each member of the first equation:

$$P^{1}/_{2} = KT$$

We may therefore write:

$$Ve = KP^{1}/_{2}$$

Which is Torricelli's Theorem; the velicity pressure relation for volumetric control reservoirs.

Now take two corresponding equations from Article 84:

$$P = KT^2$$

and

$$Ve = KT^2$$

Take the three-halves power of each member of the first equation:

$$P^{3}/_{2} = KT^3$$

And we may therefore write, as before:

$$Ve = KP^{3}/_{2}$$

Which is an equation showing the velocity varying as the three-halves power of the pressure instead of the one-half power of Torricelli's Theorem. This is the velocity-pressure relation for capillary control reservoirs and as such, constitutes a new theorem, based upon the Law of Jamin.

With velocity, as rate of production, for ordinates and pressure as abscissas, the record of wells, plotted on logarithmic mesh and shifted until straight, present the following lines:

(a) Volumetric Control—slope of line is one to two or an angle of 26 degrees, 34 minutes.

(b) Capillary Control—slope of line is three to two or an angle of 56 degrees, 19 minutes.

184. Any calculations made upon capillary control reservoirs for velocity of production, based upon the pressures of the reservoir and using Torricelli's Theorem, are incorrect. This explains the discrepancies between calculations and performance of gas wells in Kansas, Oklahoma, Ohio, Pennsylvania, New York and Canadian Provinces. (Very few of the fields in these regions are of volumetric control. With these, of course, the calculations are not incorrectly made.)

Any measuring devices, as orifice meters and pitometers, designed, regulated and calabrated for volumetric control reservoirs, where Torricelli's Theorem is appropriate, will not provide the correct results when attached to reservoirs of capillary control, if the calculations involve pressures of the reservoir and if such calculations are based upon formulas or tables constructed in accordance with Torricelli's Theorem.

Any measuring device, as Venturi meters and displacement meters, which involve only differential pressures at the meter, involve consideration of Boyle's Law in potential phase in compartments (such compartments are "reservoirs" of volumetric control), operate correctly irrespective of the control of the reservoir.

The mathematical proofs for these statements will be given in subsequent articles and sufficient evidence from field data will be offered to substantiate them. The economic importance of the new theorem in both gas and oil industries will become apparent in our investigation. It is yet early to place any estimate upon benefits to be derived by its recognition and adoption. It should be of interest to producer, carrier and consumer of natural petroleum products where measurements are made on lines directly connected with wells of this class.

The next installment concludes the discussion on the various laws of physics of fundamental importance to our treatise on fluid delivery from reservoirs.

EASTERN FIELDS

(Continued from Page 50)

Pennsylvania, the Carnegie Natural Gas Co. has drilled a test on the Dennis Fox farm through all sands and dry. In the same township, the Bell Oil & Gas Co.'s test on the Emanuel farm is a gasser in the Big Injun sand. The Carnegie Natural Gas Co.'s test on the Charles Webster farm is a gasser in the Gordon sand. In Center district, the Greensboro Producing Co. completed a light gasser in the Big Injun sand on the Melvin Mitchell farm.

Another Fourth Sand Duster

The fourth sand development in North Strabane Township, Washington County, is proving one of the greatest disappointments experienced in the local fields in a great many months. The first well was completed on the R. G. Lutton farm last year. Since that time seven wells have been completed, two good producers, two light pumpers and four dry holes. The latest completed this week is Brown & Conklin's test on the A. T. Thompson lot northwest of the good producer on the Lutton farm. Due south of the same good producer, the Manufacturers Light & Heat Co. is drilling a test on the Gowern farm. If this well proves a failure there will be a slim chance of finding an extension in any other direction from production. The dry hole on the Thompson lot was drilled to a total depth of 2,709 feet.

KENTUCKY-TENNESSEE

(Continued from Page 52)

ary 23. A crevice connection between No. 1 and No. 2 brought the latter up from 9 bbls. to 70 bbls. per day. A tubing packer has just been set to shut off the crevice.

The Vedder company has let contracts for 2,000 feet of hole to be drilled as rapidly as possible on the Tompkins lease and will also develop its Scott lease adjoining, where the company has an excellent producer in the first Sunnybrook sand.

At Goose Creek, the Cumberland Oil Syndicate's No. 1 is drilling at 360 feet, 30 feet above the Anderson sand. A good showing was had in the first Sunnybrook at from 290 to 302 feet, and will be shot later.

Richardson and Goff have let a contract to drill a test on the Ratford farm at Brush Creek.

In Other Counties

Warren County had but one completion during the week. It is the Midland Oil Co.'s No. 9 J. L. Jenkins in the Davenport Pool, good for 10 bbls. flush at 500 feet.

In Logan County, Stewart & Co.'s No. 1 Walters, southwest 50 acres, and G. C. Foster's No. 1 on the north 50 acres of the Walters tract were both abandoned.

In the Pugh area of Simpson County, Small and others' No. 4 J. J. Hogan was reported dry at 1,045 feet.

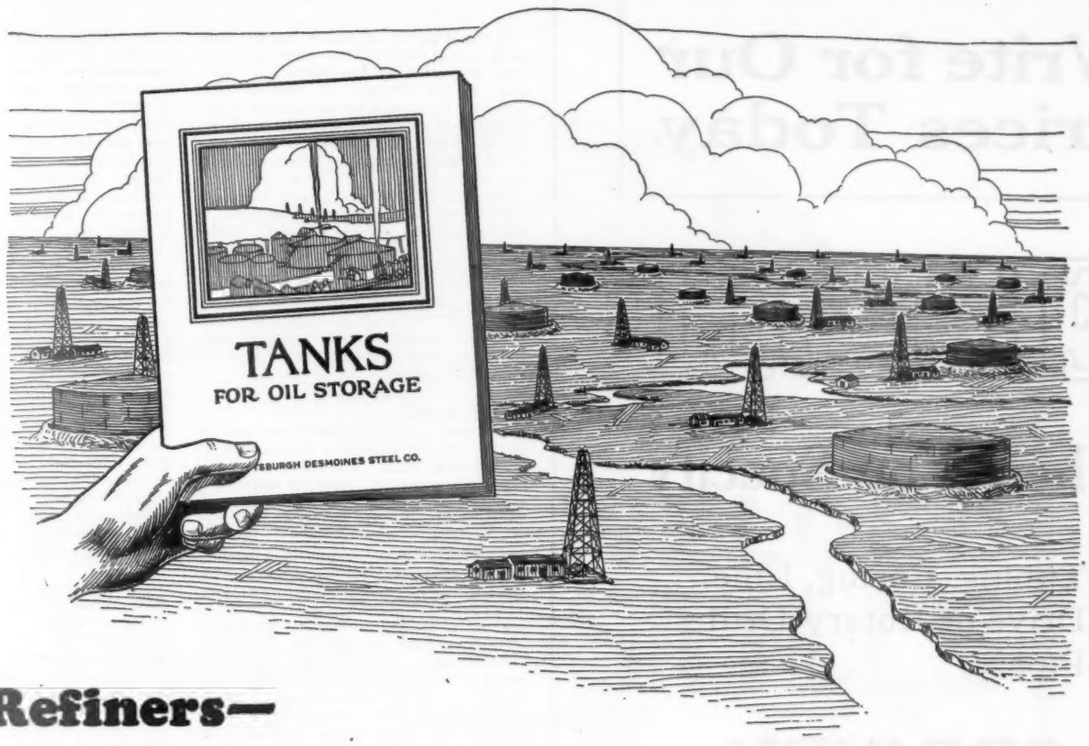
LYNN B. EASTON DIES

The death of Lynn B. Easton at Cincinnati, Ohio, on January 24, has been announced to friends of the Worthington Pump & Machinery Corp., by C. P. Coleman, president of the company. Mr. Easton was manager of the Laidlaw Works of the Worthington Corp., at Cincinnati.

"Mr. Easton died just before his fortieth birthday," the announcement states. "In the more than 20 years of work at Laidlaw and in the sales department of this corporation, he had held many position, starting with that of time clerk and ending as manager of the works. His career was a notable illustration of the opportunities open in a technical business to young men with limited technical education, but with intelligence, loyalty and abundant and vital energy. The rare combination of these qualities and a genial personality made Mr. Easton an outstanding man."

MOVE BOSTON OFFICE

The Joseph Dixon Crucible Co., of Jersey City, N. J., manufacturers of graphite products, pencils, lubricants, crucibles and paints, announces the removal of its Boston office from 49 Federal Street to 80 Federal Street in the new Chamber of Commerce Building. The staff of the Boston office consists of H. A. Nealley, district representative, looking after lubricant and paint sales; Charles A. Shaw and R. H. Brinkerhoff, crucible sales, and J. W. Loftus, lubricant and paint sales.



Refiners—
Producers—
Send for this Catalog!

Our new oil tank catalog is ready for mailing. Write for your copy today. It contains pictures, specifications and descriptions of various sizes and types of tanks, agitators and stills. If you are interested in oil production or oil storage, you will find this a catalog well worth having and worth keeping. Tear out the coupon below and write for your copy today.

Submit your storage problems to the Pittsburgh-Des Moines office nearest you. We design, fabricate and erect steel tanks of any size, from 500 gallons to 80,000 barrels in capacity. From thirty years of experience in steel plate construction we know the efficient, economical way to handle any kind of a tank job you may submit. Invest in economical, serviceable equipment for your business—for details write to our nearest office.

Ask for Our New Oil Tank Catalog No. 77.
Tell us the details of your storage problems.

Pittsburgh-Des Moines Steel Company

Main Offices: 1277 Curry Building, Pittsburgh, Pa.

977 Tuttle St., Des Moines, Ia.
1277 Praetorian Bldg., Dallas, Tex.
1277 Va. R'way & Power Bldg., Richmond, Va.
677 Book Bldg., Detroit, Mich.
377 Rialto Bldg., San Francisco, Calif.
Room 77, 50 Church St. N. Y. City
1277 First Nat'l Bank Bldg., Chicago, Ill.
377 Pioneer Bldg., Seattle, Wash.

PITTSBURGH TANKS DES MOINES TRADE MARK

PITTSBURGH DES MOINES

Tear off, fill in and mail today
PITTSBURGH-DES MOINES STEEL COMPANY
1277 Curry Building, Pittsburgh, Pa.
Please send me a copy of your New Oil Tank Catalog.
Name .....
Company .....
City ..... State .....

Write for Our Prices Today

REPUBLIC

When You Specify

Tubing, Casing, Line, Drive or Rotary Drill Pipe

SPECIFY

Republic Iron & Steel Co.

General Offices:

Republic Bldg., Youngstown, Ohio

Sales Offices:

Buffalo	San Francisco	Cleveland
Boston	Philadelphia	Dallas
St. Louis	Cincinnati	Detroit
New York	Pittsburgh	Chicago
		Birmingham

Republic Products Precede Big Oil Production ∴ ∴

GROWTH OF MOTOR USE WORLD OVER SHOWN IN REPORTS FROM ABROAD

A world survey of motor vehicle prospects in all parts of the world has just been completed by the automotive division of the Bureau of Foreign and Domestic Commerce of the United States Department of Commerce. It is of interest to the oil busienss as indicating the increasing demand for petroleum products in all countries.

Nineteen hundred and twenty-four as a record year for automotive business is shown by reports from all parts of the world, in which few countries reveal anything but increased trade during the past year. This general condition is borne out also by the 30 per cent increase in exports of all kinds of automotive products from the United States, compared with 1923. In most countries the outlook for 1925 is optimistic.

Europe

Great Britain:

Distributors of American motor vehicles and accessories anticipate increased business during 1925. Extension of motor passenger transport, which is developing rapidly throughout the British Isles, will widen the market for medium and heavy bus chassis. A new order, effective January 1, 1925, permits bus car licenses to be obtained on a more advantageous basis for part-year periods. The Irish Free State now permits vehicles bearing a British license to operate in Ireland without purchase of a separate Irish license, a provision which should do much to encourage touring. Most of the larger car firms, including those American firms now firmly established in Great Britain, look on the future with much optimism. Another favorable factor for car imports remains in their duty-free admission, this stimulus being clearly reflected in the increased customs returns since the McKenna duties were removed on August 1; so far, the principal benefits are going to France. Italy, and the United States. British production may be expected to be heavier in 1925 than in 1924.

France:

With French producers increasing their output in notable fashion, the difficulty of marketing American automobiles there may be anticipated to increase rather than diminish during 1925. This heavier production has already had its effect in a midwinter buying slump. Nevertheless, sales during the last quarter of 1924 have equaled and possibly exceeded those of the corresponding quarter of 1923. French manufacturers now give as much attention to the export trade in planning their factory schedules as they do to domestic demand, and thus far their position has been strengthened by exchange conditions that favor exports of automobiles from France. The trend of construction continues toward small cars of from 5 to 10 horse power, and it is this type of machine primarily that is being used to popularize motor transport. Total exports of all types of passenger cars during 1925 are estimated at approximately 40,000, representing from 30 to 35 per cent of the estimated entire production of French automobile factories.

Italy:

Sales of passenger cars and motorcycles in Italy should increase steadily, but the former will be practically all of Italian make and the latter will probably be British in large proportion. From the American exporters' standpoint, the growing numbers of Italian cars going to Australia, Spain, and Switzerland are of great importance. Exports are running far ahead of the last two years, and the total number of "automobiles" exported for the year 1924 should be upward of 20,000. Imports of passenger cars for the first eight months of 1924 show a considerable proportionate increase over 1923 and 1922. Sales of all passenger vehicles are active.

Germany:

Uncertainty still prevails in the German automotive situation. Lifting of the import restrictions that have subjected all entry of American products to a license system and made their number consequently negligible is still problematical. Divergent views of the manufacturers, who favor either the continuance of import restrictions or the placing of very high duties, and the German automobile dealers, who advocate lower duties and the comparatively easy ingress of American cars, form the crux of the situation. Domestic producers are studying economies in manufacturing and are preparing for mass production and lower prices.

Netherlands:

Never before has the Dutch automotive market presented better prospects than for the year 1925. Optimism seems to be the prevalent tone among all the dealers and importers, especially among those handling American makes—these being preferred by the buying public. This brighter outlook may be ascribed chiefly to the generally improved conditions, not only in the Netherlands and adjacent countries, but also in the Dutch East Indies; these regions react on local business in general, and from them the automotive trade hopes to benefit during 1925.

Belgium:

Uneasiness over heavy duties imposed by a new tariff law in November has been dissipated by the relaxing of heavier charges imposed by the measure. The chief advantages were gained on importation of parts for assembly, thus insuring continuance of the plants established by two large American producers. On the whole, the new tariff is not expected to exercise any depressing effect on American car sales. American cars maintained their price advantage over European competitors, including domestic producers. Marked improvement in the body work of of American cars is aiding greatly in the developing of their sales. All things considered, the year 1925 should be the best yet experienced for the sale of American cars in Belgium.

Denmark:

Danish sales of automotive vehicles of all classes, except trucks (for which the demand has been normal) have been very low during the past quarter, and the sales outlook for the first quarter of the coming year is, at best, uncertain. A sales tax of 15 to 30 per cent, due to expire on February 1, after a year's enforcement, has been renewed for a period of two years longer. Sales volume in the first quarter of 1925 should show a marked increase.

Sweden:

Dealers believe that business for the first quarter of 1925 will be satisfactory and possibly slightly in excess of the last quarter of 1924, in turn stronger than the corresponding period of 1923. Light trucks have had a good sale. Medium-weight trucks are used for buses, the number of which has increased greatly during 1924 and is expected to continue to increase during 1925.

Czechoslovakia:

The motor vehicle trade in Czechoslovakia in the last quarter of 1924 and throughout the entire year has been substantially ahead of the 1923 business, from the standpoint of both domestic car manufacturers and importers of foreign vehicles. There seems to be good reason to anticipate the next year's trade will show an equally satisfactory advance over 1924. The market needs automotive products and is far from saturated; and the business and general economic situation of the country is gradually returning to a normal status. Domestic manufacturers are protected by high tariffs and an import license system, and efforts are being made to increase their hold on the market. In passenger cars the trade is strongly toward the small type cheaper makes. There is an active and increasing demand for motor trucks, especially of light capacity and low price. Bus lines are increasing.

Poland:

Dealers are optimistic about sales for the first three months of 1925. Despite Poland's comparatively severe winter, sales during the last quarter of 1924 have

HAMMER-WELDED TANKS AND STILLS

EXPANSION
ABSORPTION
COMPRESSION
STORAGE

SEPARATORS
AGITATORS
EVAPORATORS
ROTARY KILNS
RETORTS
TOWERS
ETC.

PRESSURE
CRACKING
GASOLINE
FIRE

Made from "NATIONAL" Hammer-Weld Pipe

Diameters: 20 inches to 10 feet
Wall thicknesses: ¼ to 1½ inches
Lengths: as required

A hammer-forged weld is acknowledged superior to any other form of jointing in its resistance to stresses set up by expansion, contraction, shocks, heat strains and other forces.

In addition to a strong, durable type of construction, hammer-weld vessels are free from the objectionable riveted seams.

Flanges, nozzles, heads, etc., can be put on tightly and more readily to the smooth uniform walls because there need be no interference from rivets.

It will pay you to investigate the all-round advantages of hammer-weld construction for cracking and gasoline stills, absorption tanks and other similar tubular containers about your refinery. Our Bulletin No. 13 contains a fully illustrated chapter on High Pressure Vessels. Write today for your copy—free upon request.

"NATIONAL"
HAMMER-WELDED PRODUCTS

NATIONAL TUBE COMPANY
General Sales Offices
FRICK BUILDING
Pittsburgh, Pa.

Wherever oil is found

You will also find the

LARKIN

PATENTED

IMPROVED SAND PUMP

giving dependable service

Its popularity has spread rapidly since it was first introduced in Eastern fields. The one reason for its present wide distribution in service is *good results.*

This famous pump is designed to meet all conditions, and does, with an unusual degree of satisfaction. In every way it is representative of *The Larkin Line* and reflects the way in which all our Drilling and Fishing Tools have fulfilled the needs of the Industry.

Today *The Larkin Line* is more complete than ever, but it still has its basis in the one characteristic we have always held fundamental—*thorough reliability in the performance of the duty for which intended.*

If this is what you want, get *Larkin Products* from any of the leading supply stores.

Our new catalogue No. 25 describes The Larkin Line. May we send you a copy?

LARKIN & CO.

BUTLER, PA., U. S. A.

indicated a notable growth in the purchasing power of the automobile buying classes, which will undoubtedly have its effect in the next quarter. Moreover, the steady improvement in sound business and the increased interest in trucks are taken as encouraging signs for the future.

Greece:

The past year has broken all records in Greek automobile trade. At the close of the year, increased sales of buses, taxicabs and trucks were reported, resulting in part from poor tramway and railway service. American products dominate the market.

Spain:

During the first 11 months of the past year, 4,431 passenger cars, 520 trucks, and 47 motorcycles, with a total value of close to $4,000,000, have been exported to Spain from the United States. The favorable treatment of American goods accorded by Spain is due to expire on May 5, 1925, but this does not necessarily mean such treatment will cease, since there may be a further extension of the present temporary arrangement.

Latin America

Cuba:

Fundamental conditions in Cuba are believed favorable to increased automotive sales, if artificial obstacles in the nature of strikes and other disturbances do not interfere. Larger sales during the first quarter of 1925 are confidently anticipated because of more money being put in circulation by plantation and sugar mill owners. The prevailing air is one of confidence. Trade in trucks has recently been slow but improvement is expected early in 1925.

Mexico:

The Mexican market for automotive products is being viewed in general with increasing optimism. Dealers believe that with returning political stability and peaceful labor conditions, the automotive business should prosper in 1925 as never before. Completion of the Mexico-Acapulco automobile road is being awaited, and this, with other road projects, is confidently expected to give new impetus to the automotive market.

Argentina:

The present tendency of the Argentine automobile market is toward medium and low priced cars fully equipped; but there is a sale for the cars of higher price. The advantage of truck transportation is slow because of the lack of adequate highways, but sales should be larger this summer than in former years. American automobiles now comprise over 97 per cent of the total motor car imports, and leading American makes are well known in Argentina. Sales prospects in general are excellent, the agricultural and live stock industries being strengthened by large plantings and by good prices for cattle.

Brazil:

The outlook for the sale of automobiles during the early months of 1925 is encouraging. There is general hope that the money stringency will be remedied by the continuance of the present political tranquility.

Porto Rico:

During the first quarter of 1925 the automotive trade is expected to show a decided improvement in both sales and profits. There should be a material increase in the sale of passenger cars. Truck sales probably will not increase in the same proportion, since that market shows but small seasonal fluctuation.

Australia

Although imports of cars and trucks from the United States during 1924 have far exceeded any previous year, the market at present is adversely affected by proposed regulations that would increase taxes on both classes of vehicles. Nevertheless, Australia's position as a purchaser of American cars is indicated by the fact that a large American producer is preparing to establish several assembly plants in the various States.

Much attention is being given to the problem of better road transport, and it is likely that highway improvement will shortly begin. Cab and bus service is increasing in cities. Australia, by far the largest individual market for American automotive products, should retain this position in 1925.

Asia

Japan:

Participation of the United States in the Japanese market remains fairly constant, the average amount of business obtained amounting to about 70 per cent of the total value of all imports, including both passenger cars and trucks. The sales of medium priced passenger cars are fair, but the sales of lighter and cheaper cars were considerably below normal toward the end of the year. Stocks are being kept as low as possible. The truck market is dormant, and it is very probable that this condition will continue until such time as the Government commences placing orders for at least a portion of the motor equipment required for its reconstruction program.

Philippine Islands:

The trend of trade during the last months of 1924 was distinctly upward. Low priced cars held the ground previously gained, and more expensive makes registered considerable advances. General optimism among dealers is supported by actual sales records, and continued improvement is augured by the sugar and agricultural situation.

Turkey:

The closing of Anatolia for the winter will have an adverse effect on the automotive market during the early part of 1925.

China:

The year 1925 will witness a decided shakeup in the automobile business in China, it is generally expected. Financial difficulties of dealers are ascribed as the principal cause for this situation. The used car problem is another adverse factor. The belief is generally held that markets in the concessions will continue to offer less prospect for increased sales and that the necessity for properly working the interior markets is becoming increasingly urgent.

India:

Automobile business in most lines except heavy trucks is steadily improving The demand for light trucks to be used in bus service is increasing, and accessories also are experiencing heavier sales.

Africa

Union of South Africa:

The congested condition of motor car stocks in South Africa has shown marked improvement and the general position may be regarded now as normal. Concurrently with the reduced volume of cars now being received, sales have improved in most sections of the country. A good wool clip that is being sold at remunerative price levels has been one factor, while the early widespread and heavy spring rains have given an optimistic outlook to all classes of the community. The improvement has been most marked in the case of cars of the low and medium price ranges. The South African motor trade is expected therefore to enter 1925 with a clean sheet and good prospects.

Egypt:

Sales of passenger cars have been active during the fourth quarter of 1924. At no time during this period have there been unsold stocks, and in some instances dealers were booked ahead of deliveries. Because of good prices now being realized for Egyptian cotton in the world's markets and the very large tourist business anticipated in the current winter season, as well as the general prosperity of the entire country, importers generally look for increasing business during the first quarter of 1925. These factors, together with the distinct impetus given Egyptian automotive consumption during 1924, augur well for increasing consumption.

World Total 22,769,000

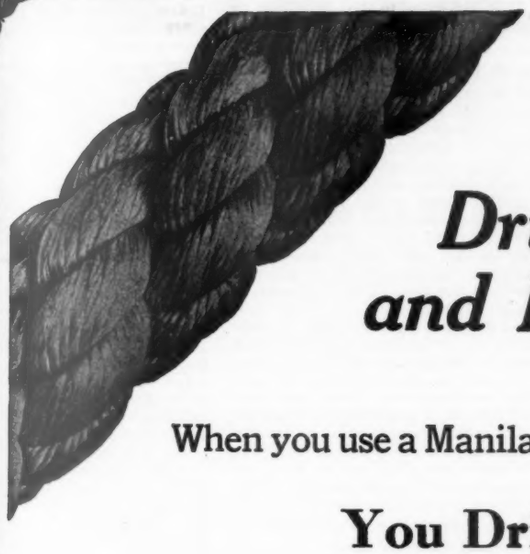
The 1925 "World Registration Survey" of the automotive division shows the following facts:

On January 1, 1925, there were in operation in all countries 18,615,000 passenger cars, 2,892,000 trucks, and 1,262,00 motorcycles.

The total of these three classes of motor vehicles was 22,769,000.

The increase for the year over the total reported on January 1, 1924, was 3,473,000, or 18 per cent.

Of this total increase, the United



Drill with Manila and Drill Better

When you use a Manila Cable you drill better because

You Drill Easier
You Drill Cheaper
You Drill Faster

There is a certain springy quality in a Manila Cable which you do not get in any other line. This makes for ease in drilling which the driller enjoys and results in a longer life for your rig.

It is cheaper to use an entire Manila Cable for the same number of feet of hole than to entirely wear out several crackers and partially a wire line.

The tools strike a harder blow and hit more often when hooked on a Manila Cable and therefore the drilling is faster.

Columbian Cable has all the qualities a driller looks for in his cable. Let your next order read *Columbian* and Drill Better. For sale at

All National Supply Company Stores

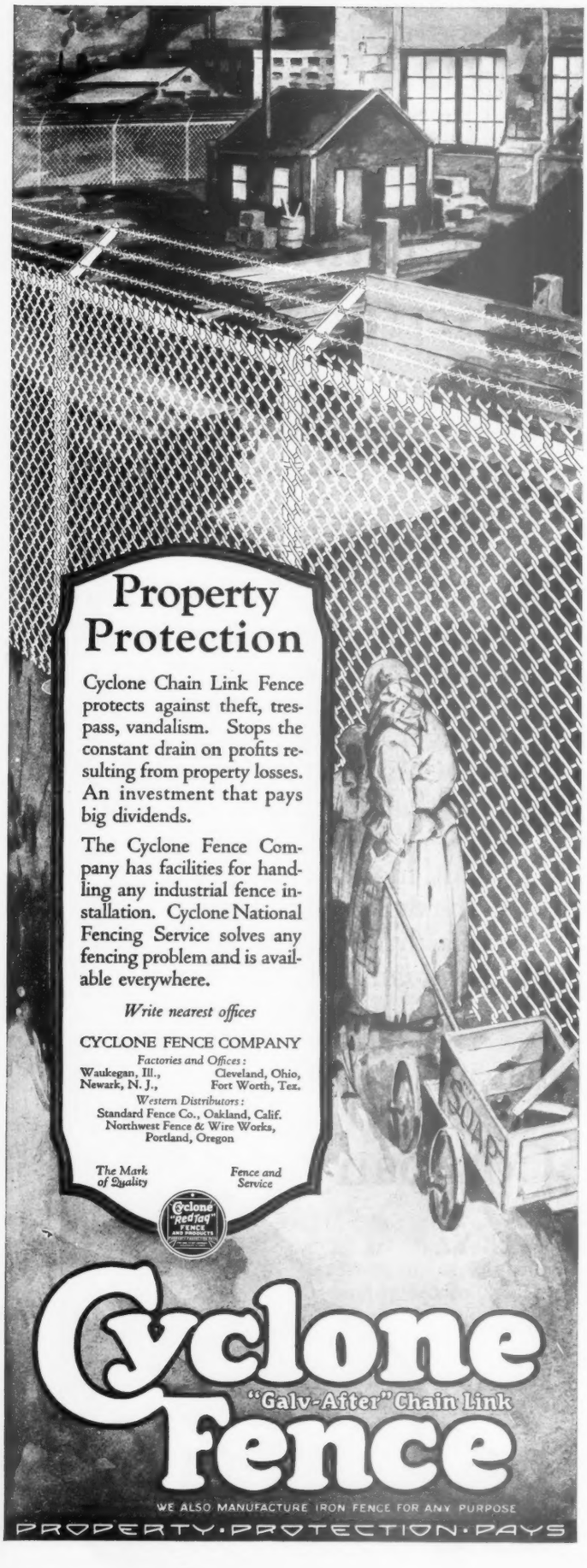
Columbian Rope Company

342-70 Genesee Street
Auburn, N. Y. ***"The Cordage City"***

BRANCHES:

New York **Boston**
Chicago
New Orleans

"Drill with Manila"


Property Protection
Cyclone Chain Link Fence protects against theft, trespass, vandalism. Stops the constant drain on profits resulting from property losses. An investment that pays big dividends.
The Cyclone Fence Company has facilities for handling any industrial fence installation. Cyclone National Fencing Service solves any fencing problem and is available everywhere.
Write nearest offices
CYCLONE FENCE COMPANY
Factories and Offices:
Waukegan, Ill., Cleveland, Ohio,
Newark, N. J., Fort Worth, Tex.
Western Distributors:
Standard Fence Co., Oakland, Calif.
Northwest Fence & Wire Works, Portland, Oregon
The Mark of Quality
Fence and Service
Cyclone "Red Top" Fence and Products
Cyclone
"Galv-After" Chain Link
Fence
WE ALSO MANUFACTURE IRON FENCE FOR ANY PURPOSE
PROPERTY·PROTECTION·PAYS

States alone accounted for 2,427,000, or 70 per cent.

The first generalization from the registration figures is that the world in the past year has demonstrated its ability to assimilate 3,300,000 passenger cars and trucks and 200,000 motorcycles in a single year. At the very conservative figure of $1,000 as an average retail value for the cars and trucks and $300 for the motorcycles, the world spent $3,360,000,000 for new motor vehicles in 1924.

An increase of 2,750,000 in passenger cars and approximately 550,000 in trucks during the course of the year 1924 reveals the interesting fact that the latter registered a more imposing rate of registration increase than did the former, the figures being 23 per cent for trucks and 17 per cent for cars. This represents a tendency which may be even more pronounced during the present year. It substantiates the oft-repeated statement that automotive vehicles are coming more and more to fill the world's needs for commercial transportation. Motorcycles, too, pushed into more widespread use, as revealed by a numerical increase of 180,000 over the base registration of 1,075,000 at the beginning of 1924, but in this case the advance has to be attributed entirely to increased use in foreign countries.

World Increases in Percentages

Looking at the world increase in motor vehicles from another angle, it is seen that the United States during the past year increased her passenger car registration 16 per cent, as compared with 27 per cent for the rest of the world. Carrying this comparison through the remaining categories, the 1924 world truck increase shows 19 per cent for the United States against 37 per cent for the rest of the world; in motorcycles, however, there is shown a 19 per cent decrease in this country, against a 24 per cent increase in all other countries combined.

These comparisons on rate increase are interesting, inasmuch as they show that it becomes increasingly difficult for the largest automotive market in the world to maintain its numerical increase year after year on such a scale as to keep it uniformly ahead of the rest of the world from a percentage standpoint.

Other Leading Countries

As American motor vehicle manufacturers give more and more attention to markets outside the confines of the United States, it is pertinent to point out some of those countries which have exhibited the greatest registration strength during the past year. In most cases these new and larger figures are the result of greater export activity on the part of American firms; but it must not be overlooked that European producers also are responsible for some of the changes.

Combining passenger cars and trucks, France and the United Kingdom, with gains of well over 100,000 each, lead all other countries in the progress toward more complete motorization. Numerically, they are followed by Australia, Germany, Canada, Argentina, Italy, Sweden, and New Zealand. A better index of registration growth might be the rate of increase. If this is taken, other countries will be seen coming rapidly to the fore with claims for recognition. These figures would include most of the more developed Latin-American countries (including Brazil, Uruguay, Cuba, and Mexico) India, Netherlands East Indies, Japan, the Netherlands, Union of South Africa—and thus the list could not continue. In fact, it might be said that almost every market of any consequence could be included in this group of forward marchers.

MODIFY GAS BILL

AUSTIN, Tex., Feb. 14.—The Baker Bill, originally presented for the repeal of the entire Cox gas utilities law was modified to meet opposition in the Senate, and was favorably reported by the House committee. In its present form the bill strikes out Section 6 of the law, which gave the Railroad Commission authority to change gas rates fixed by ordinance by the cities.

CENTRAL WEST

(Continued from Page 52)

pools lie along this stream. When drilling in the Hotmire Pool, it requires from 125 to 250 feet of 8-inch drive, which is set on top of the Niagara Limestone. Casing usually runs from 350 to 450 feet, which is set approximately between 625 and 650 feet above the top of the Trenton. Considerable work will also be done in the Princeton area in the southwestern portion of Indiana, as well as in the extreme southern part along the Ohio River.

Allendale Field

The most likely looking territory for development throughout Illinois, is the Allendale Field, in Wabash County. This territory is of a very spotted nature, but when a well is found, it usually proves a good one and for that reason, with prospects of good prices for crude, the Allendale area will be well drilled over. During the past few months much of the land on both sides of the Wabash River has been taken under lease, on the Illinois as well as the Indiana side. Among Illinois counties due for further test work, according to advices from each district, are: Edgar, Coles, Douglas, Cumberland, Clark, Crawford, Lawrence, Macon, McDonough, Hancock, Schuyler, Adams, Brown, Macoupin, Madison, Montgomery, Fayette, Effingham, Bond, Randolph, Perry, Jackson, St. Clair, White, Edwards, Williamson, Jefferson and Franklin. Jersey, Greene, Calhoun and Pike County, north of Alton, are said to look favorable for some test work.

Central Ohio will be well taken care of in the way of test work, as many of the counties in the extreme south end of the State are held under lease with much new work planned, not alone by the oil operators but the gas people.

Kentucky and Tennessee are both to be active as the recent advances in the price of crude is bound to stimulate wildcat work. Toledo and Chicago parties have leased acreage in Clay and adjoining counties in Tennessee and let contract for three wells to be drilled in Tinsley's Bottoms, in the southeastern portion of Clay County.

Lima Field

Plans are perfected for the drilling of a large number of wells on old territory throughout the Lima Field of northwestern Ohio. The new wells will be sunk deeper in the Trenton Rock, the source of the crude of the field. Thousand upon thousands of the old wells of the 90s were drilled to less than 100 feet in the sand and when the wells got so small they would not pay expenses of pumping, they were pulled out and leases abandoned. It is this territory that will see the bulk of the work in the Lima Field during the year, although much work will be done around the edges of the old producing area.

There were seven completions reported for the week, the best being drilled by the Bath Township Oil Co., in No. 4, located 560 feet from the north line and 600 feet from the east line of the J. E. Heers farm, Section 23, Pleasants Township, Hancock County, and in the McComb Field. The well showed 45 bbls. flush.

In Liberty Township, Wood County, the Ohio Oil Co.'s test in the northeast corner of the Bordner heirs' farm, in the northeast quarter of Section 5, proved a dry hole at 1,435 feet.

In Spencer Township, Allen County, in the vicinity of Spencerville, W. L. Parmenter's test on the northeast corner of the William Sever, in the northwest quarter of Section 24, pumped 30 bbls. and his No. 5, on the southeast corner of the Thomas Youngpeter farm, in the northwest quarter of the same section, pumped 30 bbls.

In Hopewell Township, Mercer County, the June Oil Co.'s No. 4, located 300 feet from the north line and 1,100 feet from the east line of the Mary E. Price farm, Section 28, pumped 4 bbls.

In Harrison Township, Paulding County, John T. Shanks has drilled in his No. 1 on the northwest corner of the C. C. Springer farm in the southeast quarter of Section 34, to a total depth of

DELTA

NO. 10 HAND LANTERN

A CROWNING SUCCESS DELTA NO. 10 ELECTRIC HAND LANTERN well deserves the name "King of All Night Lanterns." It does away with darkness and says to the workman, "See."

It throws a powerful, concentrated and continuous beam of light hundreds of feet ahead. Perfectly safe about inflammables or explosives. Built to withstand hard usage. Operates on two ordinary dry cell batteries, lasting for months, $2.75 complete (less batteries.) In Canada $3.70.

SEE WITH A DELTA. It insures Safety, Service and Economy.

Delta Electric Company

Factory and General Offices: 110 Delta Block, Marion, Ind.

Standard Makers of Electric Lanterns, Auto Spotlights, Auto Ash Receivers, Motorcycle Spotlights, Bicycle Spotlights, Electric Bicycle Lamps, Radio Head-Phones, Flashlights and Flashlight Batteries

New York City
Export Dept.
30 Water St.

Faucette-Huston Co.
Chattanooga, Tenn.

San Francisco
Sanford Bros.
311 Minna St.

Wilson-Snyder
Hot
Oil
Pumps

No Leaks
Easily Cleaned
100% Safe

Unless your Cracking Equipment includes a Hot Oil Pump, your gasoline yield will be much less than it should be—over 72 installations are proof of this fact.

Wilson-Snyder
Pittsburgh, Pa.
U. S. A.

1,433 feet and reported at 4 bbls. In Benton Township, same county, D. M. Lipps' No. 1 on the northwest corner of the Otto and E. A. Lentz farm, in the northwest quarter of Section 9, is reported at 10 bbls. from a total depth of 1,437 feet.

Illinois-Indiana

No completions were reported from the Indiana Fields for the week, and but two from Illinois, due to the bad conditions of the roads.

In Casey Township, Clark County, the Gillette Oil Corp.'s No. 3, on the southwest corner of the William Reisinger farm, Section 25, pumped 25 bbls. from the stray sand at a depth of 1,434 feet. H. A. Wertz's test on the northwest corner of the J. J. Ashley farm, in the southwest quarter of Section 23, proved a dry hole at a total depth of 1,700 feet.

In Irvington Township, Washington County, the Schunk Petroleum Co. abandoned Nos. 2 and 3 William Brewer farm, Section 15.

Central Ohio Field

Real quietude prevails throughout the Central Ohio Field, as the streams are out of their banks from the melting snow and nothing can be accomplished. During the week but three wells were completed, one dry, the other two being gas wells. There were only three new locations made and three wells started drilling. This is something out of the ordinary, for seldom a week passes but many new locations are staked and numerous wells start spudding. Many locations where drilling has been going on have shut down for better weather and are at various depths.

In Monroe Township, Holmes County, the Empire Gas & Fuel Co. has drilled in a light gas well at a test on the W. C. Bird farm, known as the McCulla farm, Section 7.

The best gas well of the week was drilled by Ringler and others on the A. J. McClelland farm, Section 4, Orange Township, Ashland County, which indicates this county still has some good territory to develop. Another well will be started on this lease as soon as material can be moved.

In Newcastle Township, Coshocton County, Bell Brothers and others drilled in a light gas well at their second test 1,100 feet west of No. 1 and 300 feet north of Owl Creek River. It is a shallow producer. No. 3, located 1,100 feet west of well No. 2 and 225 feet north of Owl Creek River, is drilling on top of the Berea sand.

In Grafton Township, Lorain County, the Logan Gas Co. is shut down at 2,700 feet at No. 2 on the Fred Klinect farm, Lot 55. This company made a location and is moving in a rig for No. 3 on the Jacob Sell 154 acres, Section 17, Cannan Township. Wayne County, 585 feet from the south line and 1,005 feet from the west line of the lease.

The Ohio Fuel Gas Co. is shut down at 2,218 feet at No. 1 Gabriel Kovach, better known as the Piper farm, Section 14, Brunswick Township, Medina County. No. 1 on the J. K. Nold farm, Section 30, Montville Township, same county, is shut down at 2,075 feet, while No. 1 Rhoda Black, mapped as the Mapes farm, Section 16, Hanover Township, Ashland County, has shut down at 150 feet.

The East Ohio Gas Co. drilled in a dry hole at No. 1 C. Ziegler farm, Section 22, Milton Township, Wayne County, and shut down No. 2 S. H. Sterling, Section 26, Hardy Township, Holmes County, at a depth of 400 feet. No. 1 on this farm is cleaning out and nearing completion.

In Hardy Township, Holmes County, the Empire Gas & Fuel Co. is starting the drill at No. 2 on the southeast corner of the S. S. Troyer farm, Section 33. The East Ohio Gas Co. is drilling Nos. 1 on the J. Frank Smith 81 acres, Section 8, and No. 2 on another 100 acres owned by the same party, in Section 7.

The Wiser Oil Co. has a rig in for a test in the northeast corner of the L. Ring 14 acres, Lot 32, Columbia Township, Lorain County. Daugherty Brothers have a rig up for a test 500 feet from the south line and 300 feet from the east line of the F. C. Akins 15 acres, Lot 34. This location is along Rocky River.

The Logan Gas Co. will abandon No. 1 on the T. W. Burns, Section 28, Benton Township, Hocking County.

In Carthage Township, Athens County, Waldron Brothers struck water at the top of the Keener sand at 1,143 feet in a second test on the Kate Evans farm, Section 3. This was 28 feet in that formation and drilled down at 1,171 feet was a dry hole and will probably be drilled deeper. The well of McBride and others on the Watkins farm, Section 2, same township, was drilled to 1,230 feet and its gas not increased. This well is now making salt water. In York Township, same county, Stevens and others are drilling No. 4 on the Stephens Arnot 275 acres, Section 35. In Romer Township, same county, Stephens & Youman found the Maxon sand dry at No. 4 G. S. Parker farm, Section 35, at a depth of 1,050 feet and shut down awaiting orders.

Dunham Brothers got a light showing of gas in the Big Injun sand at No. 2 Phoebe Barrows farm, Section 33, Decatur Township, Washington County, at 1,212 feet and now drilling deeper. In Barlow Township, same county, William Barrett and others drilled a light gas well in No. 1 A. Harvey. Gas was found in the Big Injun sand at 1,415 feet.

Hardin County Producer

At the Roundhead Oil & Gas Co.'s No. 4 on the Hites farm, in McDonel Township, Hardin County, Ohio, on the second screw it started filling at the rate of 100 feet per hour and will make one of the banner finds of the county. The location was made by W. P. Smith of Roundhead, pioneer of the present pool and general manager of the Roundhead company. The oil is some deeper than the early well in the Lima Field, ranging around 1,450 feet. Hardin County is south of the old Trenton Rock producing line and just south of Hancock County.

Tests Near Freetown, Ind.

H. C. Murphy of Brownstown, Ind. reports a drilling machine has been moved on a block of leases near the town of Freetown, in the northern part of Jackson County, that State. This will only test out the shallow sands where oil has been found in the boring for water wells, which went to depths up to 500 feet. One well showed 5 bbls. No. 1 was near the center of the west line of Section 9-6-4 east, with an elevation of 608 feet. Showing of oil was found at 417 feet. No. 2 is near the center of the south line of Section 5-6-4 with an elevation of 616 feet and had a slight oil showing at 443 feet. No. 3 in the south part of Section 4-6-4 and east from No. 2 about 1 mile has an elevation of 597 feet and a showing of oil and gas at 400 feet. The hole was plugged, but the oil and gas still shows. No. 4 with an elevation of 623 feet was drilled about 1 mile directly east from No. 1 and in the center of the west line of Section 10-4-4, with the best showing of oil of any of the four. All the wells were drilled about 18 feet below the top of the Devonian lime and into a sand formation.

ANTI-CARBON MEASURE OFFERED IN ARKANSAS

LITTLE ROCK, Ark., Feb. 14.—Among measures affecting the oil and gas industry pending in the legislature is a bill which prohibits the use of natural gas (except casinghead gas) within the State of Arkansas for the purpose of obtaining carbon black. It was referred to the committee on natural resources which recommended that it pass.

Another seeks to validate oil and gas leases heretofore or hereafter executed by boards of directors of school districts, trustees, boards of deacons, elders, or governing boards of cemeteries, churches, fair associations or other eleemosynary institutions.

A Senate bill seeks to domesticate foreign railroad and pipe line corporations and another gives to pipe lines and railroads the right to construct, operate and maintain lines along the public highways, streets of cities and towns, over and across the lands of individuals and corporations, across and under the waters and over any lands of the State.

"I consider the Regan Control Head an Absolute Necessity!"

THE Field Superintendent who made this statement *knew* what he was talking about! He has been active in many fields for years. He has seen the havoc wrought in a few seconds by a *wild* well!

Today there is no excuse for being constantly in fear of one of these "wild wells." The Regan Casing Control Head positively keeps your well—*any* well—under complete control. If your well comes in unexpectedly it can be capped quickly, requiring only a few hours, whereas without this great protection it may require many days.

So far as we know, not a single well equipped with the Regan Casing Control Head has ever been lost. This is the strongest possible endorsement—one which merits your investigation immediately.

The Regan has made a clean sweep in gas-pressure fields in California without one instance of failure or disappointment. This ingenious piece of mechanism, the Regan Head, is a preventive of blow-outs, of gas leaks, of danger. Its insurance feature alone is worth many times the cost of the head. * * * Don't fail to send today for our very interesting catalog describing the different types of Regan Control Heads.

New York Office, Woolworth Bldg., 233 Broadway, Wm. Braat, Manager
New York Cable Address: "Braat"
A.B.C. Code: 5th Edition: 5th Edition Improved 6th Edition.

Regan

Los Angeles Cable Address: "Reganforge" Western Union Five Letter Code.

Forge & Engineering Co.

Manufacturers of Oil Well Equipment

Quality - Wrought on the Forge of Experience

San Pedro, California U·S·A.

The TRUMBLE sells on Results!

"Ask Any Trumble User"

The Trumble Gas Trap was the pioneer patented oil and gas separator. It has led the field since first produced—in sales—and results.

The Trumble really separates oil and gas on a practical, economical basis. A saving of oil is effected by holding the lighter fractions in the oil while the separation is taking place. It saves both oil and gas.

RESULTS are what you want—and the Trumble sells on RESULTS. It has an old and respected name. But we don't ask you to buy on name only. We show you the *results*. Ask any Trumble user—you'll find many of them throughout the leading oil fields.

Write us now for full information and prices.

TRUMBLE GAS TRAP CO.

801 Higgins Bldg., Los Angeles, Calif.

William C. Rae, Sales Manager

Eastern Representative:
C. F. CAMP
14 East Seventh St. (P. O. Box 289)
TULSA, OKLAHOMA

Receipts by Water At Atlantic Ports Most Since August

By N. O. Fanning

NEW YORK, Feb. 16.—Estimated receipts of crude and refined oils at Atlantic ports during January amounted to 16,148,000 bbls., a daily average of 521,000 bbls. This is a gain of 1,368,000 bbls. over December in total receipts and of 47,000 bbls. in the daily average.

January daily average receipts were the largest since August, 1924, when receipts also averaged 521,000 bbls. daily. They compare with a daily average of 365,000 bbls. in January, 1924.

Comparison over the last 12 months indicates with a fair degreee of clearness that receipts vary according to refinery operations in the respective months. If the January increase in receipts bears out the experience of the past, therefore, a considerable gain in refinery operations is indicated in January of this year.

Bureau of Mines figures show runs of 385,000 bbls. daily in Atlantic Coast refineries for December, when receipts averaged 474,000 bbls. daily. In August last, when receipts also average 521,000 bbls. daily, refinery runs averaged 416,000 bbls. daily, representing a gain of 31,000 bbls. daily over the December figure. As pointed out, receipts in January show a gain of 47,000 bbls. over December, so that a gain of at least 25,000 bbls. daily in refinery runs can be expected.

January receipts, averaging 521,000 bbls. daily, afford another proof of the improvement in the oil business, as indicating larger purchases of oil by Eastern refiners and marketers. Of course receipts by water are supplemented by tank car and pipe line receipts of crude and refined, but the water movement represents at least 60 per cent of the water and land movement combined.

Percentage of Crude

The estimated daily average receipts by water at Atlantic ports since July, 1923, have exceeded refinery runs by from 30,000 bbls. to 143,000 bbls. daily, based on monthly figures. Since January, 1924, the excess has amounted to from 74,000 to 143,000 bbls. The largest excesses occurred in June, July and August, when it is probable the receipts by water of gasoline and other finished products would be greatest, and therefore, the percentage of crude smallest.

Estimating the average amount of crude received by pipe line since January, 1924, at 100,000 bbls. daily, and the excess of receipts by water at 93,000 bbls. daily, the amount of crude received by water may be estimated in the following manner:

Crude *Requirements	Received by Pipe Line	Received by Tanker
414,000	100,000	314,000

*Refinery runs.

Deducting the estimate of 314,000 bbls. of crude received daily by tanker, from 488,000, average receipts for 1924, the remainder, representing the amount of gasoline, fuel oil and other finished products, would be 174,000 bbls. daily. The month of January, 1924, is not included in this calculation because imports from Mexico were artificially restricted, and therefore the figure of receipts was not representative of the usual movement.

The following table gives a comparison by months of daily average receipts of crude and refined oil by water, and the total oils run to stills at Atlantic Coast refineries as reported by the Bureau of Mines. Percentage figures are based only on crude runs. (Barrels daily):

	Estimated Receipts (Oil and Gas Journal)	Refinery Runs (Bureau of Mines)	Per Cent Capacity
January, 1925	521,000	.....	....
December, 1924	474,000	385,000	78.2
November	476,000	397,000	81.3
October	454,000	380,000	77.9
September	475,000	375,000	77.5
August	521,000	416,000	85.3
July	517,000	396,000	81.2
June	571,000	428,000	....
May	542,000	412,000	....
April	528,000	420,000	....
March	468,000	387,000	....
February	457,000	368,000	....
January	365,000	379,000	....
December, 1923	456,000	389,000	....
November	435,000	385,000	....
October	497,000	438,000	....
September	419,000	389,000	....
August	447,000	371,000	....
July	407,000	333,000	....

January, 1924, was the only month in which receipts by water fell below refinery runs. This may be partly explained by the artificial restriction of imports from Mexico mentioned before.

Baton Rouge Gains

Of the January, 1925, water receipts, those from Baton Rouge and New Orleans, combined, show the largest increase over December. The New Orleans or Baton Rouge district accounted for 3,017,000 bbls., against 1,995,000 bbls. in December. The Port Arthur district is credited with 3,777,000 bbls. in January, against 3,161,000 bbls. in December.

Receipts from the Houston area fell off from 4,331,000 bbls. in December to 2,863,000 bbls. in January.

The heavy receipts from Baton Rouge were the feature of the month, averaging 97,000 bbls. daily, of which the Standard of New Jersey accounted for at least one-third. Baton Rouge is the location of the big refinery of the Standard Oil Co. of Louisiana, a subsidiary of the Jersey company.

California Declines

January receipts from California amounted to 2,364,000 bbls., a decline of 240,000 bbls., compared with December, and a decrease of 2,574,000 bbls., or 52 per cent, compared with January, 1924, when Pacific Coast receipts amounted to 4,938,000 bbls.

The following table shows total receipts of oil during January, 1925, December, 1924 and January, 1924, as estimated from arriving oil-laden vessels (in barrels):

	Jan. '25	Dec. '24	Jan. '24
Baton Rouge	3,017,000	1,995,000	654,000
Port Arthur	3,777,000	3,161,000	3,339,000
Texas City	2,863,000	4,331,000	686,000
Pacific Coast	2,364,000	2,604,000	4,938,000
Mexico	3,856,000	2,639,000	2,462,000
Other imports	271,000	50,000	.....
Total	16,148,000	14,780,000	11,985,000
Daily average	521,000	474,000	385,000

A feature of the imports during January, 1925, was the first arrivals of cargoes of crude at Fall River from Aruba, a new shipping point for Venezuelan crude.

FORMAL ORGANIZATION ON COST ACCOUNTING

The plan for the bringing about of uniform accounting methods in the petroleum industry, which will martial the best financial men in the business for the actual work and will give all concerns and individuals opportunity to participate and get the benefit of the discussions, is now well under way under the auspices of the American Petroleum Institute.

Formal organization of the committee on uniform methods of oil accounting was accomplished at a meeting held January 30 at Chicago, attended by 14 of the 18 men composing the committee. M. W. Mattison, director of the division of taxation and accounting of the institute, was made chairman of the committee, and he will devote practically his entire time to the working out of the program, the chief feature of which is to be a manual of oil accounting applying to all branches of the industry.

The general committee has been divided into geographical sections or sub-committees and the personnel of these divisional groups has now been named as follows: California, Rodney Durkee, controller, General Petroleum Corp., chairman; John H. Tuttle, secretary, Standard Oil Co. (California), and R. D. Mathews, comptroller, Union Oil Co. of California; Rocky Mountains, George F. Smith, treasurer, Continental Oil Co.; Oklahoma-Kansas, George F. Winters, controller, Phillips Petroleum Co., chairman; H. G. Humphries, Skelly Oil Co., and C. B. Ware, Carter Oil Co.; Texas-Arkansas-Louisiana, L. S. Sinclair, general auditor, Magnolia Petroleum Co., chairman; L. H. Atwell, controller, Humble Oil & Refining Co., and A. F. Whiting, treasurer, Louisiana Oil Refining Corp.; Appalachian, C. H. Jay, controller, Pure Oil Co.; E. G. Seubert, vice president, Standard Oil Co. (Indiana); H. A. Gidney, general auditor, Gulf Oil Corp., and F. J. Huffman, South Penn

Pity the Poor Chinaman

Through to China

We haven't reached China yet but the boys are drilling some deep ones.

Nothing gives them greater confidence in the ticklish business of going in and coming out of the deep holes than PLENTY OF POWER.

It will do you good to see a TITUSVILLE ACME Twin Cylinder Engine work. More good to have it producing for you.

Titusville Twin Cylinder Drilling Engines

The TITUSVILLE IRON WORKS Co.
TITUSVILLE ~ PENNA.

TITUSVILLE EQUIPMENT

Oil Country Boilers
Steam Drilling Engines
Tico Gas Engines
Flapper Valve Pumps
Pumping Powers
Twin Drilling Engines
Rotary Machines Rotary Drawworks
Swivels Slush Pumps
Crown Blocks
Traveling Blocks
Rotary Drilling Specialties

TITUSVILLE OIL COUNTRY MACHINERY
RUGGED ~ ENDURING

AFFILIATED COMPANIES FOR DISTRIBUTION

For Mid-Continent, Eastern, Western and Coastal Fields:
The Continental Supply Co.

For California:
The Republic Supply Company of California

For Export:
The Continental Well Supply Company,
No. 2 Rector Street,
N. Y. City

Thrice prepared in time of "grief" is the driller who has

a good crew
beside him

a good string
under him

and a

NATIONAL
TURNBUCKLE DERRICK
over him

Hard luck has a hard time with this triumphing triumvirate!

NATIONAL TURNBUCKLE DERRICK COMPANY

413 Wright Bldg., Tulsa, Oklahoma

Affiliated Companies:
Osage Rig, Reel and Lumber Association:

Yards at:
Burbank, Shidler, Lyman, Davenport, Pawnee, Wynona and Wetumka, Okla.

Mahan, McCarty and Besse, contract rig builders.

NATIONAL TURNBUCKLE DERRICKS

Built by Men Who Know How for those Who Know Quality

Oil Co.; New York, Harold Butt, controller, Tide Water Oil Co., chairman; Paul R. Jones, secretary, Henry L. Doherty & Co.; F. S. Reitzel, assistant to president, Sun Oil Co., and Ira McFarland, controller, The Texas Co.

The first work will be done in California. Mr. Mattison is expected to leave New York for California some time in February and make the necessary preparations for the work. Meetings of the California group will be held in both San Francisco and Los Angeles, starting early in March.

THE PRODUCER'S PART IN OIL CONSERVATION

(Continued from Page 23)

Against this total available supply would be a domestic consumption amounting conservatively ao 1,650,000,000 bbls and exports totalling 42,000,000 bbls. or a total demand of 1,692,000,000 bbls. Under these conditions it is obvious that after using up our last barrel of oil in storage we would still be 23,000,000 bbls. short.

Imports of 100,000,000 bbls. from South America have been included in the estimated total supply as, under conditions of a serious shortage in our domestic production, the South American fields, especially those in Venezuela, would be intensively developed.

Without South America

In contrast with the hypothetical situation referred to by the President let's see what the situation would be if we produced an aggregate of 1,400,000,000 bbls. of oil in 1924 and 1925 with consumption, imports and exports the same as in the "no new wells" set of figures, but omitting the 100,000,000 bbls. of oil from South America. Under these conditions we would have the following "balance sheet for 1924-1925":

Stock Jan. 1, 1925	352,631,000
Domestic Production	1,400,000,000
Imports	160,000,000
	1,912,631,000
Exports	42,000,000
Domestic consumption	1,650,000,000
Stock Dec. 31, 1926	220,631,000
	1,912,631,000

Of the six items in the above balance sheet only one, "stock January 1, 1925," is known—the other five are necessarily estimates. While probably many oil producers think we will produce over 700,000,000 bbls. in 1925—and as much in 1926, it is probable that our imports will be less than 160,000,000 bbls., rather than more. Our exports will probably not exceed 20,000,000 bbls. in 1925 and 22,000,00 bbls in 1926. And our domestic consumption will probably be about 800,000,000 bbls. in 1925 and 850,000,000 bbls. in 1926.

On this basis, we will draw about 132,000,000 bbls. of oil out of storage between January 1, 1925, and December 31, 1926. This is an average of about 5,500,000 bbls. a month, or 180.000 bbls. a day.

By a tactful phrasing the President, in his opening sentence, confined his application to the word "wasteful" to the flush production end of the industry.

From the conservative estimate that our present wells will produce about 570,000,000 bbls. in 1925 and about 485,000,000 bbls. in 1926 it is obvious that the wells producing oil January 1, 1925, will be perfectly harmless, so far as "overproduction" in 1925 is concerned. And it is equally obvious that if we should have an overproduction in 1925 it can only come from wells drilled in 1925—that is, from "new" production.

No General Wastefulness

According to Geological Survey figures there were, on January 1, 1923, a few less than 285,000 producing oil wells in the United States. During 1923 we drilled in a few more than 16,000 oil wells. However, the overproduction of 1923 did not come from the 285,000 wells that produced 557,000,000 bbls. of oil in 1922. And it did not come from about 14,000 out of the 16,000 wells that were drilled in 1923. It did come, however, from about 2,000 "big wells" in the eight fields that were brought to their peak production in the year 1923

Likewise, in the aggregate, the 300,000 wells that produced 714,000,000 bbls. of oil in 1924 are perfectly harmless so far as overproducaion in 1925 is concerned.

It would therefore appear that if the quick development of prolific new fields were "wasteful"—and the industry will not plead guilty to general wastefulness in any of its other activities—then the real opportunity for effective conservation would be a "constructive retarding" of the development of prolific new areas. The enforcement of any conservation program that does not take into consideration the essential difference between "new" and "old" production will obviously work serious hardships on the owners of "small" wells. And of over 300,000 wells, more than 250,000 are "small."

Very obviously "our present leasing and royalty practices" constitute the legal background for the quick development of any new area, big or little—and the Sherman Anti-Trust Act is the threatening shadow that lies across every pathway leading to a "gentleman's agreement" in drilling up a field. In other words, the real problem in economically developing a new field is not industrial, but legal.

In the matter of producing oil, the industry is between two millstones. The upper stone is "our present leasing and royalty practices" and the nether stone is the Sherman Anti-Trust Act. Between them the producer is ground—and the oil pours out.

The latest developments indicate that in carrying out their "fact finding" program the Federal Oil Conservation Board will interpret the words "conservation" and "wastefulness" in the broadest possible sense and will ultimately cover every phase of the industry, both domestic and foreign.

Nothing could furnish a greater opportunity to the industry than an unprejudiced "fact finding" investigation—especially one whose personnel ranks as high as the present board.

What the industry has most needed is not knowledge about its own business, but changes in the legal restrictions that have stood in the pathway of its solution of its own problems.

The greatest singie service that our Government can render the oil industry is to "loosen the legal harness"—and this, with no thought of Government regulation or control.

SUIT ON INSTRUMENTS SETTLED OUT OF COURT

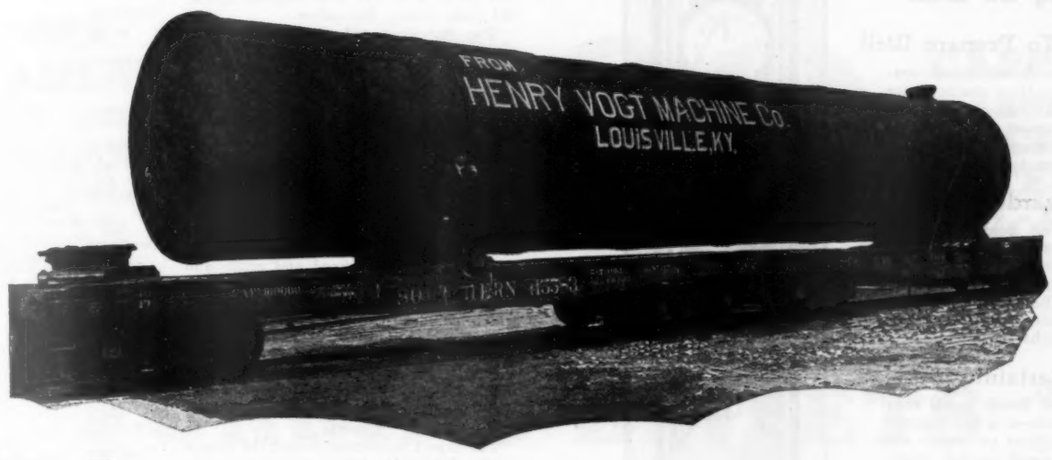
The suit brought in the Federal court at Chicago by the Brown Instrument Co., against the Republic Flow Meters Co. and certain individuals has been settled out of court to the mutual satisfaction of both parties, and also certain lawsuits brought by the latter company against Richard P. Brown have been dismissed, according to an announcement recently issued by M. J. Evans of the Republic company.

"The officers of the Republic Flow Meters Co.," the announcement says, "did not wish to be under the imputation of illegally using any of the original constructions of the Brown Instrument Co. It having been called to their attention that there were pending on behalf of the Brown Instrument Co. patent application covering some of these features, to avoid controversy the Republic Flow Meters Co. has changed the construction of its indicating and recording pyrometers announced by it to avoid any question of infringement either of patents or of original designs or construction of the Brown Instrument Co."

THORN CREEK VETERAN DIES

PITTSBURGH, Pa., Feb. 14.—Samuel N. Boyd, aged 78, died at his home here recently. He was born in Butler, Pa., and in early life engaged in the oil industry, having taken an active part in the development of the Thorn Creek Field.

They didn't take a chance



Vogt Stills were ordered

SPECIFICATION

Size — 10′ dia. x 60′ long

Plate Thickness — ⅞″, 1″ and 1⅛″

Rivets — 1¼″ swelled neck

Operating Conditions — 100 lb. @ 800° F.

Test Pressure — 225 pounds

Shipping Weight — 107,500 pounds

Low carbon open hearth still-bottom steel.

Edges of all plates machined on plate planer — not bevel sheared.

Circumferential joints assembled by expansion and contraction method.

Rivet holes drilled from solid plates after assembly.

Seams electrically welded inside and outside — instead of calked.

THE men responsible for the purchase of equipment at this large eastern refinery knew that they could not afford to buy other than the best. They realized that destruction of property and loss of life frequently result from apparently slight defects in such high pressure and high temperature stills.

They also realized that every so-called boiler shop is not competent to build stills — that special equipment and an organization trained up to that high grade workmanship (see specification) is necessary to produce stills that will not require frequent and expensive repairs to keep them tight. This is another reason why they ordered Vogt Stills.

And they didn't take a chance upon costly delays in their construction program due to failure of the manufacturer to complete the stills as required. They were confident, when they signed the contract, that the stills would be completed as specified. Their confidence was not misplaced. The promised shipment was anticipated almost three weeks.

HENRY VOGT MACHINE CO.

Incorporated

LOUISVILLE, KENTUCKY

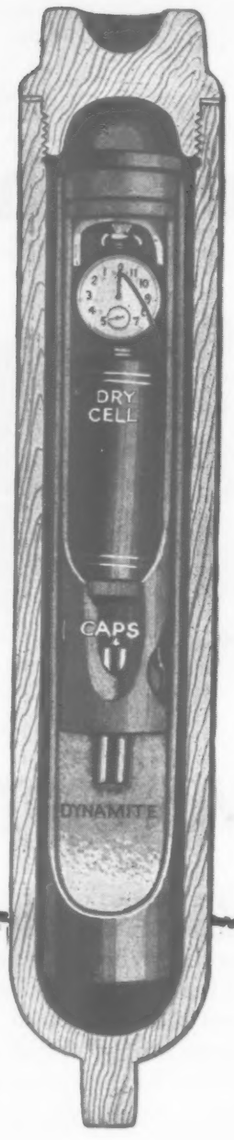
Branch Offices: NEW YORK, CHICAGO, PHILADELPHIA, DALLAS

Manufacturers of Oil Refinery Equipment, Water Tube and Horizontal Return Tubular Boiler Drop Forged Steel Valves and Fittings, Ice Making and Refrigerating Machinery.

Zero Hour Electric Bomb

(A Detonator For Oil Well Shooting)

Brings Advantages Never Before Realized in Shooting Oil Wells



Ample Time To Prepare Well

Zero Hour Electric Bomb is time controlled. You have from one to eleven hours as you wish, after placing bomb and shot, to lift casing, swab well, or do anything else necessary to place it in proper condition for shot.

Eliminates Hazardous Practices

Zero Hour Electric Bomb eliminates cleaning out of cavings on top of an unexploded shot, and the attendant danger of plugging or ruining your well. Shot and Bomb are placed together before lifting casing—cavings cannot prevent discharge.

Discharge A Certainty

Zero Hour Electric Bomb is self contained and operated—it is not dependent upon outside force or chance for discharge. It is proof against water, friction and magnetism.

Gets Well on Production Quickly

Zero Hour Electric Bomb is completely shattered on discharge leaving an unobstructed hole, permitting the well to clean itself and be placed on production quickly.

The Only Positive Improvement Made In Oil Well Shooting Methods in 60 Years!

Zero Hour Electric Bomb

Electrically Operated **Time Controlled**

ZERO HOUR ELECTRIC BOMB is also economical. IT costs less than the wire for electric shots in wells of average depth. IT eliminates expensive delays, such as those caused by broken wires or the necessity for cleaning out cavings. IT eliminates the additional cost of correcting the result of a faulty shot, such as drilling through a wire bridge. IT assures an unobstructed hole, permitting the well to clean itself quickly and under favorable conditions, and be placed on production with the least loss. ALL of which make for economy.

Send for Free Booklet--"Oil Well Shooting: Past and Present"

"An ounce of prevention is worth a pound of cure." Learn more of the elements that enter into the successful shooting of oil wells—Address, P. O. Box 2100, Casper, Wyoming.

ZERO HOUR TORPEDO COMPANY

CASPER, WYO. Box 2100 — TULSA, OKLA. Box 1278 Dial 2-9612 — BOULDER Colorado

DECEMBER GULF PORT SHIPMENTS SHOW INCREASE OF 2,009,257 BBLS.

HOUSTON, Tex., Feb. 14.—The movement of refinery products and crude from the Gulf ports by water during the last month of 1924 totals 15,324,232 bbls., an increase of 2,009,257 bbls. over the figures for November. It was divided as follows: Refinery products 9,582,121 bbls., compared with 7,820,124 bbls. in November and crude 5,742,111 bbls. against 5,494,851 bbls. during November.

The Standard Oil Co. of Louisiana topped all other shippers with a total of 3,423,201 bbls., made up of 1,765,281 bbls. refinery products and 1,675,920 bbls. of crude, which are probably the largest consignments for one month from the refinery at Baton Rouge. The Humble Oil & Refining Co. loaded out 2,505,158 bbls. of crude alone from its Texas City terminals, Baytown refinery and Port Neches terminals from which crude from the Orange Pool is handled. From Port Arthur, the Gulf Refining Co. loaded out 1,941,781 bbls. of refined and crude and The Texas Co. 2,283,019 bbls.

The Port Arthur-Beaumont district, which includes the larger refineries, loaded vessels with a total of 7,079,436 bbls. of refinery products and crude. The Texas City-Houston ship channel plants sent out 4,821,595 bbls. of both grades and the south Louisiana ports 3,423,201 bbls.

Exports

The export movement during the month totals 1,740,641 bbls., compared with 2,015,252 bbls. during November. The refined consigned to foreign ports aggregates 1,323,251 bbls., a loss of 646,051 bbls., compared with November. Only one cargo of 417,390 bbls. was shipped abroad and that was by The Texas Co. The comparison shows an increase of 371,440 bbls. over the November consignments.

The following table gives the shipments by each company:

FROM PORT ARTHUR
By The Texas Co.
Refined

Coastwise	1,390,953
Export	474,676
Total	1,865,629
Crude	
Coastwise	417,390

FROM PORT ARTHUR
By Gulf Refining Co.
Refined

Coastwise	1,941,781

FROM BEAUMONT
By Magnolia Petroleum Co.
Refined

Coastwise	1,361,160
Crude	
Coastwise	77,097

FROM SABINE PASS
By The Sun Oil Co.
Crude

Coastwise	121,174

FROM PORT ARTHUR
By Atlantic Oil Producing Co.
Crude

Coastwise	139,807

FROM SMITH'S BLUFF
By Pure Oil Pipe Line Co.
Refined

Coastwise	674,325
Crude	
Coastwise	171,813

FROM NECHES TERMINAL
By Humble Oil & Refining Co.
Crude

Coastwise	300,255

FROM TEXAS CITY
By Humble Oil & Refining Co.
Crude

Coastwise	1,560,614

FROM TEXAS CITY
By Vacuum Oil Co.
Crude

Coastwise	227,724

FROM TEXAS CITY
By Swiftsure Petroleum Co.
Crude

Coastwise	284,217

FROM BAYTOWN
By Humble Oil & Refining Co.
Refined

Coastwise	1,185,099
Export	546,346
Total	1,731,945
Crude	
Coastwise	635,289

FROM HOUSTON
By Galena-Signal Oil Co. of Texas
Refined

Coastwise	212,000

FROM HOUSTON
By United Central Oil Corp.
Crude

Coastwise	*139,806

*Account Atlantic Oil Producing Co., 75,002 bbls. Account United North & South Oil Co., 64,804 bbls.

FROM HOUSTON
By Deepwater Refining Co.
Refined

Export	30,000

FROM BATON ROUGE
By Standard Oil Co. of Louisiana
Refined

Coastwise	1,018,419
Export	746,862
Total	1,765,281
Crude	
Coastwise	1,657,920

SUMMARY

Shipments of Refined and Crude From Gulf Ports by Water During December, 1924

Company and port—	Refined	Crude	Total
The Texas Co., Port Arthur	1,865,629	417,390	2,283,019
Gulf Refining Co., Port Arthur	1,941,781	.....	1,941,781
Magnolia Petroleum Co. Beaumont	1,361,160	77,097	1,438,257
The Sun Co., Sabine Pass	.....	121,174	121,174
Atlantic Oil Producing Co., Port Arthur	.....	139,807	139,807
Pure Oil Pipe Line, Smith's Bluff	674,325	171,813	846,138
Humble Oil & Refining Co., Neches Terminal	.....	300,255	300,255
Humble Oil & Refining Co., Texas City	.....	1,560,614	1,560,614
Vacuum Oil Co., Texas City	.....	227,724	227,724
Swiftsure Petroleum Co., Texas City	.....	284,217	284,217
Humble Oil & Refining Co., Baytown	1,731,945	635,289	2,367,234
Galena-Signal, Houston	212,000	.....	212,000
United Central, Houston	.....	139,806	139,806
Deepwater Refining Co., Houston	30,000	.....	30,000
Standard of Louisiana, Baton Rouge	1,765,281	1,657,920	3,423,201
Total December	9,582,121	5,742,111	15,324,232
Total November	7,820,124	5,494,851	13,314,975
Difference	1,761,997	247,260	2,009,257

EXPORT SUMMARY

The Texas Co., Port Arthur	.....	417,390	417,390
Humble Oil & Refining Co., Baytown	546,389	.....	546,389
Deepwater Refining Co., Houston	30,000	.....	30,000
Standard of Louisiana, Baton Rouge	746,862	.....	746,862
Total December	1,323,251	417,390	1,740,641
Total November	1,969,302	46,950	2,015,252
Difference	646,051	371,440	274,611

HIGHER COST OF GAS SEEN IN PITTSBURGH

PITTSBURGH, Pa., Feb. 14.—The present rate of 60 cents per 1,000 feet for natural gas at Pittsburgh probably will be increased to 62 or 63 cents in 1925 and to 66 to 67 cents in 1927-28, J. B. Tonkin, general manager of the People's Natural Gas Co., testified in the Public Service Commission's hearing.

Mr. Tonkin presented a contract between the People's and the Hope Natural Gas Co. of West Virginia. Both are subsidiaries of Standard Oil of New Jersey. Under the contract, the People's company will pay the Hope company 35 cents per 1,000 feet in 1925; 37½ cents in 1926 and 40 cents in 1927-28. Mr. Tomkin said the increasing scale was necessary, since the Hope company is engaged in extensive exploration in southern West Virginia and must be guaranteed its price in advance so as to justify expenditures.

BLACKWELL GAS ELECTION

OKLAHOMA CITY, Okla., Feb. 14—Officials of the Blackwell Oil & Gas Co. announce the company will ask, at the April election, for renewal of its gas franchise in Blackwell, at the same rate now being charged for domestic and industrial gas. The net cost of domestic gas there is 36 cents per 1,000 feet and municipal utilities are charged only 5 cents per 1,000 feet. These utilities, it is said, use an average of 163,000,000 feet a year.

BIT AND JAR-STEEL

BOX-PIN-STEEL-SLIP-STEEL

UNDER-REAMER-BODY and CUTTER STEEL, DRILL COLLAR STEEL

ASCO

CAPPING and SOCKET STEEL TOOL-JOINT STEEL

SPECIAL-HIGH-GRADE

SPECIAL ALLOY STEEL

FORGING-BILLETS

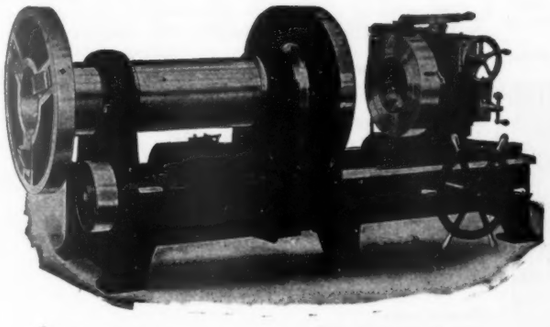
QUALITY and SERVICE

Manufactured By

ANDREWS STEEL CO.

NEWPORT, KY.

PEERLESS B6K DUPLEX P-D-G



NEARLY

99 44/100 %

One Company in the oil field writes: "We are doing 98% of the pipe and casing threading in this locality, and want to open another shop in a new location. Please place our order for two more large Duplex machines with extra wide skip tooth dies and sliding heads like we have here. Please rush all possible."

Let us help solve your threading problems.

BIGNALL & KEELER MACHINE WORKS,
of the N. O. Nelson Mfg. Co.,
Edwardsville, Illinois

Group Appraisals of Oil Properties

Time Saving Method Suggested for Making Analytical Calculations on Producing Valuations, Now First Published

By Charles S. Larkey* and Richard T. Bright

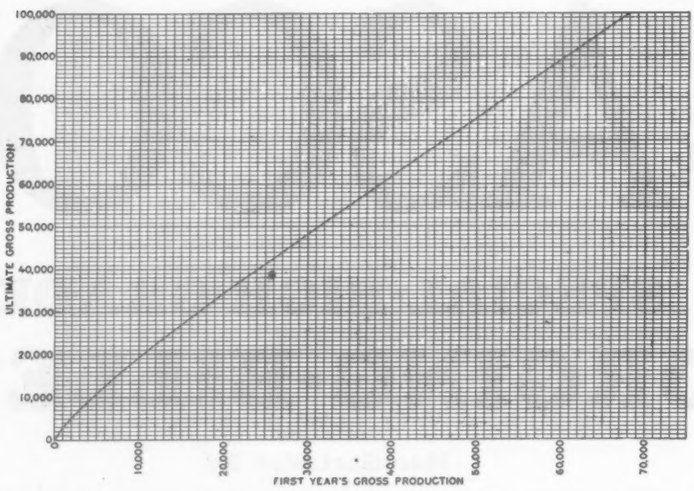
In the appraisal of oil properties, it often becomes necessary to appraise a group of leases whose production is from the same producing horizon. Instances of this kind are quite common in appraisal work where valuations are set up under the discovery provisions of the income tax law. In order to shorten the work of analytical appraisals for such purposes, the writers have found the method outlined in this article to be very practical and a great time saver; i.e., where quite a number of valuations are to be set up, based on the same decline curve. While the method has been in use by engineers for some time, to the best of our knowledge, nothing has been published on the details of its application.

For the purposes of this discussion, it is assumed the reader is familiar with methods of constructing a composite production decline curve for any group of similar producing properties, and such methods will not be discussed here; but, for methods of determining such curves, the reader is referred to the Manual for the Oil and Gas Industry, published by the Treasury Department, and to the various handbooks and texts on oil and gas valuation.

Figure 1 is a suggested form for the presentation of a valuation by this method. Modifications and changes of this form are needed in many instances to meet the requirements of the particular appraisal to be made, but such refinements will suggest themselves to the engineer using this method, hence it is not necessary to indicate the numerous adaptations which can be made, so long as the principle is made clear by the form shown.

It will be noted that Figure 1 gives some of the details required in Form O of the Treasury Department, and in this respect it may be used as a supporting schedule in claims for revaluation on account of discovery. While not a part of the valuation itself, such information is very pertinent in establishing some of the data of the valuation, and for this reason is included.

*Valuation engineer, Sinclair Oil & Gas Co.



In this valuation, it will be noted that additional wells which may be drilled within the proven area have been valued in the same manner as the discovery well, except that a probability factor has been used to take care of the hazards incident to such later drilling. The determination of a probability factor rests with the engineer making the appraisal, and should be based on such considerations as drilling programs, the size of wells which may have begun producing within 30 days of the discovery, water encroachments, sand and structural conditions as indicated by geological investigations.

Following the details of the valuation through in Figure 1, the first year's production is estimated from the first 30 days' production, usually from a curve prepared for this purpose; then the ultimate production is obtained from the first year's production. Curve 1 is an ultimate production curve of this type, and is referred to in Figure 1 to determine the ultimate production of 72,200 bbls. from the first year's production of 47,500 bbls. Or Curve 1 may be made to show the ultimate production from the first 30 days production if desired. Details for the construction of this curve are not given, as curves of this type are used quite generally and are well understood.

The estimated net ultimate production is then found by multiplying the ultimate gross by a factor which represents the operator's interest, usually seven-eighths, as in this instance.

The net value† of oil per barrel shown here represents a market price of $2 per barrel less 50 cents per barrel operating cost, leaving $1.50 net. In estimating the average per barrel operating cost for the life of the well, such overhead cost as is applicable should be included.

The total face value of the oil is then found by multiplying the net value per barrel by the number of estimated net barrels, giving a value of $94,763, which by the application of a discount factor taken from Curve 2, is reduced to a present value of $85,097. Deducting the development cost of $32,000 from this present value gives the net present value of the well at the date of discovery.

For the additional well value, a lower development cost has been deducted to obtain the net present value, for the reason that the first well drilled is usually at a higher cost than the average subsequent wells.

Inasmuch as additional wells must be drilled at some future time, their present value at the date of their completion must be again discounted to determine their value as of the date of the discovery well. Under the heading "Deferment for Additional Wells," of Figure 1, four additional wells have been allowed on a drilling program calling for a completion of a well every three months. The present value of each of these wells at the discovery date is then equal to the additional well value already obtained multi-

(Continued on Page 100)

†Many engineers prefer to use a per well yearly operating cost instead of an average per barrel over the life of the property. Such change can easily be made if desired, but in either instance the operating cost should be deducted before discounting to present value.

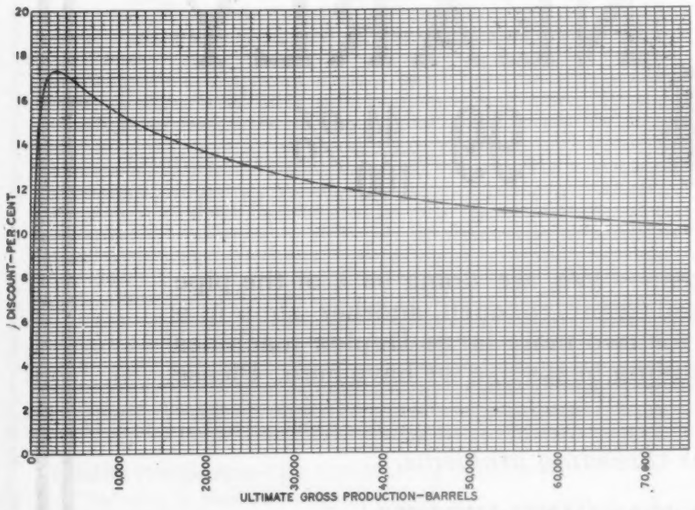


FIGURE 1
Valuation of a Hypothetical Oil Property by the Group Appraisal Method

BLANK OIL COMPANY
John Doe Lease—Discovery No. 1

Discovery well	No. 1	Date production began	June 1, 1924
Date commenced	April 20, 1924	Sand depth	2900 feet
Date completed	June 4, 1924	Gravity of oil	38° Baume

VALUATION

	Discovery Well	Additional Wells at 75%
First 30 days' gross production, barrels	7,520	
Estimated first year's gross production, barrels	47,500	
Estimated ultimate gross production, barrels (Curve 1)	72,200	$4,150
Estimated ultimate net production, barrels	63,175	47,381
*Net value of oil per barrel	$1.50	$1.50
Total value	$94,763.00	$71,072.00
Discount for present value (Curve 2)	10.2%	10.9%
Present value	$85,097.00	$63,325.00
Less development cost—		
Tangible	$14,500.00	
Intangible	17,500.00	30,000.00
Net present value at date of discovery	$53,097.00	$33,325.00

DEFERMENT FOR ADDITIONAL WELLS AT 10 PER CENT DISCOUNT

Development program:	
1 well deferred 3 months at 0.97561	$ 32,512.00
1 well deferred 6 months at .95238	31,738.00
1 well deferred 9 months at .93023	31,000.00
1 well deferred 12 months at .90909	30,295.00
Total net present value of additional wells at date of discovery	$125,545.00
Net present value of discovery well at date of discovery	53,097.00
Total present value at date of discovery	$178,642.00
Less leasehold cost	50,000.00
Total appreciation due to discovery	$128,640.00

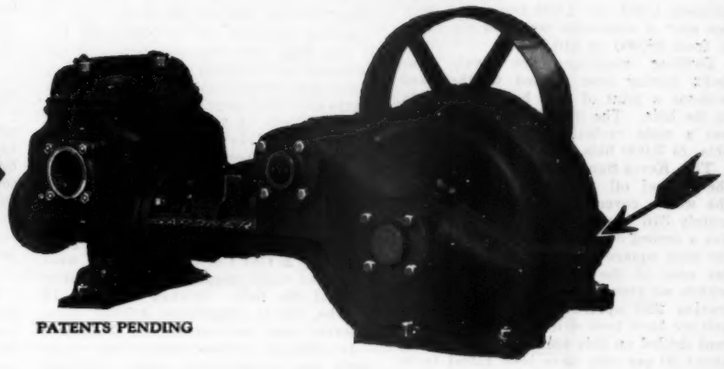
*Equals market value of oil less 50 cents per barrel operating cost

FIGURE 2—COMPILATION OF DATA FOR COMPOSITE DISCOUNT CURVE

	A	B = A × Compound Discount Factors											C	D	E=C/D	F=1-E
	Gross Production Curve	Gross Production Curves Discounted to Present Value at 10 per Cent Compound Discount											Discounted Ultimate Gross	Actual Ultimate Gross	Present Value Discount Factor	Rate of Discount to Present Value
Year	(Bbls.) C.D.F.'s	1 .95238	2 .86580	3 .78709	4 .71554	5 .65049	6 .59135	7 .53759	8 .48872	9 .44429	10 .40390	11 .36718	12 .33380	Prod.	Prod.		
1	80,000	76,190	16,280	5,297	2,171	1,029	539	304	183	113	74	49	33	102,261	112,669	.9076	.0924
2	18,803	17,908	5,827	2,388	1,132	593	335	200	125	81	54	37		28,680	32,669	.8779	.1221
3	6,730	6,410	2,627	1,245	653	368	220	137	89	59	40			11,848	13,866	.8545	.1455
4	3,034	2,890	1,370	718	405	242	151	98	65	44				5,983	7,136	.8384	.1616
5	1,582	1,507	790	445	266	166	108	71	49					3,402	4,102	.8294	.1706
6	912	869	490	293	182	118	79	54						2,085	2,520	.8274	.1726
7	646	539	322	201	130	87	59							1,338	1,608	.8321	.1679
8	372	354	221	143	95	65								878	1,042	.843	.157
9	255	243	158	105	72									578	670	.863	.137
10	182	173	115	79										367	415	.884	.116
11	133	127	87											214	233	.918	.082
12	100	95												95	100	.95	.05

12 PLACES TO OIL
SEVERAL TIMES A DAY

ONE PLACE TO OIL
ONCE A MONTH



PATENTS PENDING

GREATEST ADVANCE IN PUMP DESIGN IN YEARS!

At last you can buy power pumps that do not require daily attention. Bearings and gears of unenclosed pumps, even with constant care, are seldom kept thoroughly lubricated and are constantly exposed to grit and dirt.

These disadvantages are overcome in the new GARDNER enclosed power pumps. No exposed gears. Flood-lubrication insures thorough oiling, multiplying the life of the pump. Workmen are saved many hours of time. Our entire line of power pumps is now offered in this design. This is what the oil industry has needed for years. Send for Bulletin EP-1.

Quality Builders for Over Sixty-five Years

Territory Still Available to Agents

THE GARDNER GOVERNOR COMPANY
Quincy, Illinois

CHICAGO	NEW YORK	PHILADELPHIA	HOUSTON	SAN FRANCISCO	LOS ANGELES
549 W. Washington Blvd.	524 Singer Bldg.	604 Arch St.	718 Heights Blvd.	400 Fourth St.	419 E. Third St.

DISTRIBUTORS TO THE OIL INDUSTRY

The Continental Supply Co., Stores in All Fields.
Norvell Wilder Hardware Co., Houston and Beaumont.
F. W. Heitman Co., Houston.
Alamo Iron Works, San Antonio
Pelican Well Tool and Supply Co., Shreveport.
Haywood Williamson Co., Shreveport.
Republic Supply Co., Los Angeles.
Kirk W. Eickelberger, Risito Building, San Francisco.
Perkins McIntosh Petroleum Tool and Boring Co., Ltd., 25 Bishopsgate E. C. 2, London, England

If Your Supply Company Can't Supply You, Write Us Direct

GARDNER
GOVERNORS
PUMPS · COMPRESSORS

GARDNER

Faith is Retained in Sweetgrass Arch

Montana Petroleum Engineer Looks for Other Fields Than Sunburst. Low Priced Acreage and Good Market

By F. C. Platt

SHELBY, Mont., Feb. 14.—With 363 completions to its credit in 34 months, the Kevin-Sunburst Field, in Toole County, Montana, has produced approximately 2,000,000 bbls. of crude, which ranges in gravity from 29 to 42 degrees Baume. This production has been extracted from an area, which may be roughly described as one township—about one-sixth of the area covered by the structure. Production to date has been found in two sands, the depth varying between 1,400 and 1,600 feet. The average cost of completed wells on the pump is from $8,000 to $10,000.

Drilling conditions are ideal, some wells having been drilled to the sand without a joint of pipe having been put in the hole. The initial daily production has a wide variation, ranging from 15 bbls. to 5,000 bbls.

The Kevin-Sunburst Field is one of the largest oil producing structures in the world, covering an area of approximately 316 square miles. The field now has a record of little more than one well for each square mile, with more than 80 per cent of the completed wells drilled within an area of about 36 square miles, leaving 280 square miles on which the balance have been drilled. Of the 20 per cent drilled on this semi-proven territory, about 50 per cent have been found to be commercial, producing either oil or gas.

Ask Modest Bonus Prices

In this 280 square miles of semi-proven territory is acreage that may be obtained by an operator for a very modest bonus, and the possibilities for commercial production on the acreage are equally as good as on what is now considered fully proven territory.

There are three classes of land in this field—the patented lands without mineral reservations, government lands and State lands. The bulk of the land is patented, and all has been or can be leased.

Due to the low price of oil during the past year, all Standard companies have been practically inactive, the entire activity in this field being due to smaller companies and individuals with limited capital. They have rushed work with the realization that the price of oil is bound to advance and the cost of acreage will go up when this field becomes more widely known.

Nine refineries in northern Montana and southern Alberta with an approximate capacity of 20,000 bbls. daily have been built. Their representatives are in the field continuously, bidding for present and anticpated production. With the present daily production of 6,000 bbls., the reason for their offer of from 10 to 25 cents bonus over the posted field price of $1.12 is obvious.

At this time it is necessary for the Ohio Oil Co. to ship its oil from Wyoming to Calgary, due to the fact that they have only a few thousand barrels of oil in storage in their 315,000-bbl. tank farm at Sunburst.

Easy Access to Markets

The field is on the main line of the Great Northern Railway, affording ready access to markets both east and west, north and south. A north and south branch of the Great Northern, connecting with the Canadian Pacific Railway at Coutts, Alberta, runs through the field, facilitating shipment in these directions. Canada is the logical market for oil from this field, owing to low freight rates, as compared with other fields, and to the further fact that there is no duty on crude oil. There are no oil fields of consequence in western Canada, making available for operators here a very large and stable market.

The first well in the Kevin-Sunburst Field was drilled in Section 16, Township 35 north, Range 2 west, by the Gordon Campbell-Kevin Syndicate No. 1. Drilling started in April, 1921, and was completed March 14, 1922. Oil was found at 1,770 feet in the Ellis sand.

The second well in the field, in Section 34, Township 36 north, Range 2 west, was completed June 5, 1922, by the Sunburst Oil & Gas Co. This well produced 100 bbls. of 36 degree oil from the Sunburst sand, at a depth of 1,545 feet. It augmented the boom in the field.

Active entrance of the Ohio Oil Co. in the field, with the completion of the Sunburst well, started a vigorous drilling campaign. Since that time, many large companies, including the California Co. (a subsidiary of the Standard of California), the Midwest through its subsidiary, the Mid-Northern, the Carter, the Mutual and several others have acquired acreage and have established permanent camps in different parts of the field for development of their large holdings.

Following the completion of the Sunburst Oil & Gas Co. well, locations were made and wells completed over the entire area of the field. Within the next 12 months, due to competitive drilling, three different areas were intensively developed.

In addition to these three areas where work was concentrated, many scattered completions were made, but even to date not one 40-acre tract has been completely drilled up.

One of these groups where concentrated drilling was done is around the original Sunburst well, in Township 35 north, Range 2 west, including such wells as the Ohio Oil Co.'s No. 3 Baker, which has produced over 200,000 bbls., and the Homestake Development Co.'s Howling lease, which has produced nearly 150,000 bbls. of oil from four wells.

The second of these groups formed about 4 miles east and a little south, in Township 35 north, Range 1 west, and centered about the Security and Bitter Creek wells. The third group, 6 miles south of the first in Township 34 north, Range 2 west on which wok has been concentrated during the past six months, due to large initial production, has lately created a great deal of interest. The latest completion was the Johnson Signal Hill Syndicate, headed by Jim Johnson, mayor of Shelby, which undoubtedly would have made over 6,000 bbls. a day, had it been allowed to flow to capacity, and which is at present making 2,000 bbls. It has been found that the wells in this group have a tendency, if allowed to flow to capacity, to drill themselves into water.

As soon as the field showed its commercial possibilities, the Illinois Pipe Line Co. established headquarters at Sunburst, and at the present time has considerably over 100 miles of pipe line, which connects with all producing wells in the field. This company has at all times, promptly connected up with any new production.

Geology of the Field

The field contains two producing horizons, the first being the Sunburst sand, and the second the Ellis. The Ellis sand is in reality, a broken lime with some secondary quartz, lying at the base of the Ellis formation and immediately on top of the Madison limestone.

The Colorado shale, (lower cretaceous) is exposed over the entire structure, and varies in thickness, due to erosion, from 700 feet on top of the structure to its maximum thickness in this area of about 1,750 feet. Immediately underlying this, is the Kootenai formation (lower cretaceous), about 380 feet thick, at the base of which is found the Sunburst sand. Underlying the Kootenai is the Ellis formation (Jurassic), about 230 feet in thickness, which lies unconformably upon the top of the Madison lime (Mississippian), the contact between the two being where the producing sand is found.

The Sunburst sand is very lenticular, varying in thickness from a few to 100 feet, and in places being entirely absent. This sand is quite porous, being a true quartz sand, and where found productive, the wells have shown a very small rate of decline. None of the wells so far found in this sand had an initial production of over 300 bbls., but the rate of decline is gradual, the gravity of the oil high (about 42 degrees Baume), and the possibility of offsetting wells being productive, makes any Sunburst sand area very attractive to the operator. The depth to this sand, wherever found productive in the field, has never exceeded 1,500 feet, and probably averages 1,400 feet.

Ellis Sand Irregular

The Ellis sand is very irregular in nature, being in reality, a broken lime with some secondary quartz. The irregular nature of this sand appears due to the fact that the top of the Madison formation in this structure is composed of hills and valleys, the valleys being filled, or partially filled with talus from the erosion of hills. This talus, which is called the Ellis sand, is simply weathered lime, the size of the grains varying from very small particles to pieces one-fourth of an inch in diameter, and the size very probably being governed by the distance down the slope of the hills where the drill happens to hit the sand. The spotted condition of the Ellis is probably due to the fact that should the drill happen to hit the top of the hills, where no talus could accumulate, it would go directly from the black limey shale at the base of the Ellis formation to the Madison limestone. This would explain dry offset wells to good producers.

The Ellis sand has been by far the most productive, the initial production of the wells varying between 15 and 5,000 bbls. The oil is lower in gravity than that from the Sunburst sand, being about 32 degrees Baume, with some sulphur content. Sulphur water in varying amounts is found with the oil, so that it is necessary to steam the oil to reduce it to one-half of 1 per cent basic sediment, required by the Illinois Pipe Line Co. This low percentage required is due to danger of the pipe line freezing, during winter months.

The depth of this sand ranges between 1,450 and 1,700 feet, depending upon the structural position of the well.

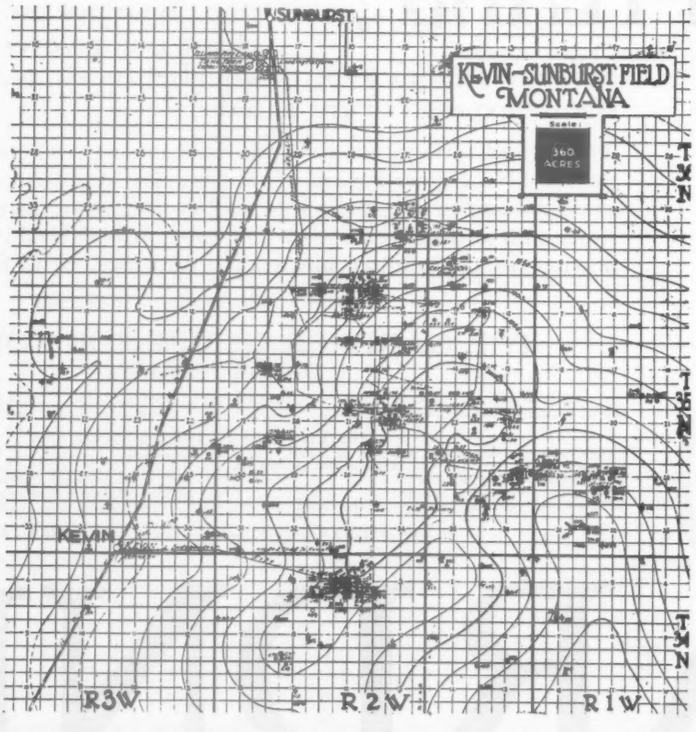
There are 16 commercial gas wells scattered throughout the field, ranging from 1,000,000 to 10,000,000 feet capacity. With the exception of the California Oil Co.'s No. 2 Abell, which found the gas in a stray sand in the Ellis, above the regular producing horizon, all of this gas is found in the Sunburst sand. It is impossible to estimate the potential gas production of the field.

Expansion Is Next

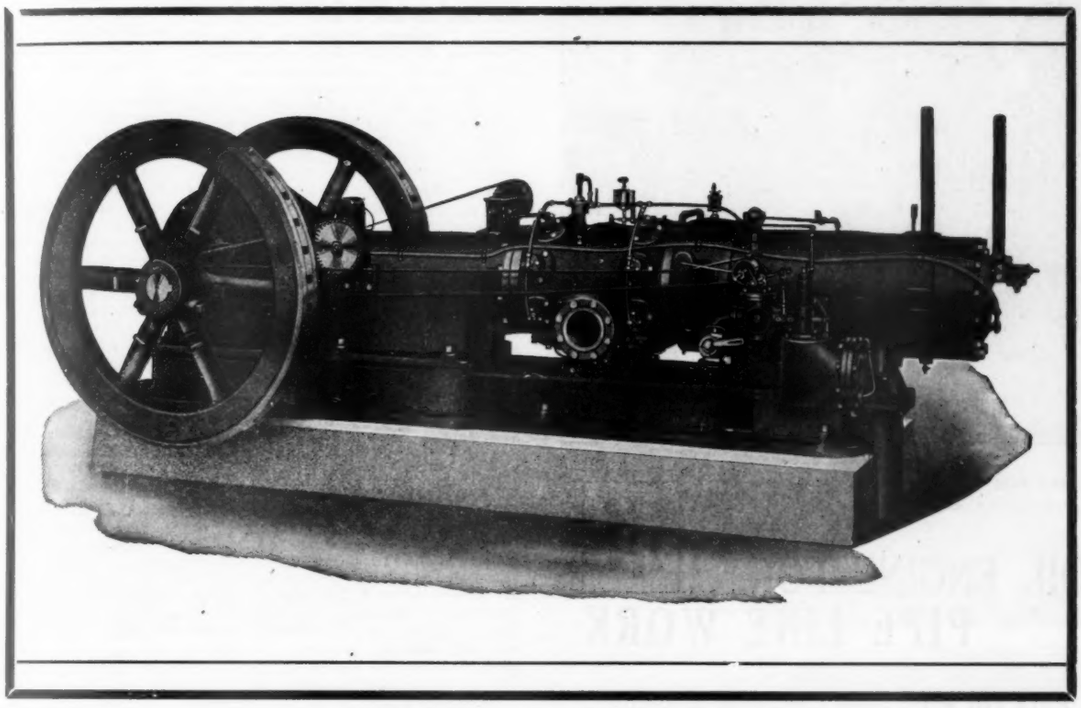
This year will undoubtedly see the greatest activity in the Kevin-Sunburst Field since its discovery. With the expectancy of higher oil prices, the exceptional demand for this crude, and the Great Northern Railway Co.'s known demand for fuel oil, as they have already changed 50 per cent of their locomotives to oil burners in this district, as well as the depletion of storage oil at the Ohio tank farm at Sunburst, (315,000-bbl. capacity), the reason for the bonus over the posted field price is easily understood.

During the past year, due to the low posted price, the larger companies agreed among themselves to do as little development work as possible, and, on account of this, a large number of offset wells, which would have been drilled, have not been.

(Continued on Page 100)



The above greatly reduced map shows the scattered positions of the pools making up the Kevin-Sunburst Field which lies in several townships. The black square drawn on the map, representing 360 acres, gives the reader a good idea of the expanse of territory covered by the field.



Dependable compressors for oil companies

OIL companies, large and small, are installing Chicago Pneumatic Air Compressors for transferring oil and for construction work around refineries and in the field. One oil company in the middle west has installed three belt-driven compressors—one, a large duplex unit—a steam engine, five large gas engines, and an oil engine for direct connection to a triplex pump—*all* manufactured by the Chicago Pneumatic Tool Company. Reliable and positive in operation, Chicago Pneumatic Compressors are ideal for supplying oil field air requirements. The cost of *your* field construction and refinery transferring operations will cease to be problems if you install Chicago Pneumatics.

Over 500 distinct types and sizes, stationary and portable, for every power requirement. Capacities 100 to 10,000 cubic feet of air per minute. Expert engineering counsel without obligation. Ask for Bulletins

Chicago Pneumatic Tool Company

6 East 44th Street, NEW YORK, N. Y.

*Sales and *Service Branches all over the World*

*Birmingham	Denver	*Los Angeles	*Philadelphia	*San Francisco	Berlin	Calcutta	Havana	Kobe	Moncton	Paris	*Sao Paulo	Timmins
*Boston	*Detroit	*Minneapolis	*Pittsburgh	*Seattle	Bombay	Christiania	Helsingfors	London	*Montevideo	*Rio de Janeiro	Seoul	Tokyo
*Chicago	El Paso	*New Orleans	Richmond	*St Louis	Brussels	Dairen	Honolulu	Manila	*Montreal	Rotterdam	Shanghai	*Toronto
*Cincinnati	Houston	*New York	Salt Lake City	Tulsa	*Buenos Aires	Durban	Johannesburg	Milan	Osaka	Santiago	Tampico	*Vancouver
*Cleveland												*Winnipeg

Canadian Pneumatic Tool Company, Ltd., Montreal, manufacturers of Chicago Pneumatic products in Canada
Consolidated Pneumatic Tool Company, Ltd., London, manufacturers of Chicago Pneumatic products in England

C-121

BOYER PNEUMATIC HAMMERS··LITTLE GIANT PNEUMATIC AND ELECTRIC TOOLS
CHICAGO PNEUMATIC AIR COMPRESSORS··VACUUM PUMPS··PNEUMATIC HOISTS,
GIANT OIL AND GAS ENGINES ROCK DRILLS ·· COAL DRILLS

CHICAGO PNEUMATIC

Depend upon *that Name*

In one of the Mexia field stations of the Pure Oil Pipe Line Company

THE OIL ENGINE FOR PIPE LINE WORK

The Pure Oil Pipe Line Company is using four 50 HP Ingersoll-Rand Type "PO" horizontal single-cylinder oil engines for driving pipe line pumps. They also use three 100 HP engines of the same type to drive air compressors for blowing oil wells.

The simplicity, reliability and operating economy of the Ingersoll-Rand horizontal, single-cylinder Type "PO" oil engines make them particularly suitable for driving these pipe line pumps and high pressure air compressors.

Let our engineers show you how these oil engines can drive your pipe line pumps for less money.

Bulletin 10004 describes them in detail.

INGERSOLL-RAND COMPANY

11 Broadway, New York

Offices in principal cities the world over.

Atlanta	Denver	Philadelphia
Birmingham	Duluth	Pittsburgh
Boston	El Paso	Pottsville
Buffalo	Houghton	San Francisco
Butte	Joplin	Salt Lake City
Chicago	Knoxville	Scranton
Cleveland	Los Angeles	Seattle
Dallas	New York	St. Louis
Detroit	New Orleans	Washington

For Canada refer Canadian Ingersoll-Rand Co., Limited, 260 St. James St., Montreal, Quebec

57-SOE

Ingersoll-Rand

CALIFORNIA FIELDS

(Continued from Page 40)

is in the oil sand at 1,587 feet, an early completion is anticipated. The Pan American is rigging up No. 2 Sentous and is hauling in material for No. 7. The company's first well is averaging a little less than 100 bbls. a day.

The Petroleum Securities (Doheny) following its usual policy, is pursuing a rather intensive drilling program. On the Cone lease, the company, in addition to cementing No. 1 on top of the oil sand at 1,495 feet, has staked locations for Nos. 3 and 4. The Petroleum Midway is starting two new holes, No. 1 Maynier and No. 1 Smith. The Pacific Oil Co., drilling just outside the proven limits of the field shows 3,057 feet of hole in No. 2 Baldwin. The Mohawk's initial producer has only been on production intermittently and the trouble which this well is causing has held up work on No. 2, which was scheduled to be spudded in last week. The latest entrant in the field is the Universal Consolidated Oil Co., erecting a rig for its first hole, No. 1 Youngsworth.

It is reported that considerable leasing is being done adjacent to the Newport area and, while this seems authentic, the rumor that the Standard, Shell, Marland and Ramsey have acquired leases could not be verified. Water broke in on the Interstate Oil Co.'s No. 1 Mesa at Newport, which looked like a good well after being plugged back from 3,350 feet to 715 feet, and it will be another two or three weeks until a satisfactory test can be made. The Newport Petroleum is going ahead slowly in its first tunnel, which is at present around 230 feet in length. The South Basin is preparing No. 3 Newport for a pumping test at 1,220 feet and the company believes it should be good for about 15 bbls. a day.

Seal Beach

The Shell is mudding up No. 2 Bryant, its Seal Beach wildcat which blew out a few weeks ago at 4,398 feet. No estimate is available as to the damage done, but the company should be in a position shortly to clean out the hole and go ahead if possible. The production from No. 1 Bryant, an edge well, has declined to 60 bbls. a day and a corresponding increase has been noted in the amount of water produced. The company is preparing to plug No. 1 Bixby, drilled to 6,142 feet. The Shell has about 600 acres under lease in this area, but notwithstanding this large control, will not be able to develop commercial production unless more favorable leases are secured. For this reason the Shell will undoubtedly enter a good bid on any other property available.

The Standard has not yet drilled out No. 100 Murphy at Coyote but is going ahead in No. 101 on the same lease at 2,900 feet. A string of 11-inch has been cemented in No. 102 at 3,260 feet, while a similar string has been landed in No. 40 Emory at 3,510 feet. The Union reports 240 feet of oil sand in No. 55 Graham & Loftus, also in Coyote, and there is a good prospect that deep production may be secured.

Montebello

The Repetto Hills Oil Co. is testing the showings found in its Motebello wildcat between 3,600 and 3,900 feet and there is a bare possibility that a small pumper may be secured. The Standard has carried No. 21 Home at Whittier down to 4,165 feet in search of deep production and will continue drilling unless mechanical trouble develops. The Ocean View Oil Co. cemented well No. 2 at 3,478 feet a week or so ago but has not yet drilled out. In the Rideout Heights area the Associated cemented No. 1-A Gregg at 3,739 feet some time ago but has not yet resumed work. The Pan American is drilling ahead in No. 1 Jesurum at 4,340 feet. The Petroleum Midway is fishing for a string of 8¼-inch casing in No. 1 Seward at 4,805 feet and is bailing No. 1 Witte at 4,682 feet. The Union is still working on the road and tank grades for No. 1 Olinda at Fullerton but will probably start work within the next few weeks. The Chicksan Oil Co. ran into a little fishing job in No. 2 Bradford at Richfield while going ahead at 2,840 feet but the delay will undoubtedly only be temporary. The Chanslor-Canfield Midway Oil Co. has removed the 4¾-inch from No. 1 Bradford, drilled to 4,117 feet, and will carry it to the deep sand. The Tonner Oil Co. shows 635 feet of hole in No. 1 Swan, while the Fullerton has reached a depth of 900 feet in its well No. 19.

Another Big Well at Ventura

The Associated finished another big well in the Ventura Avenue Field in Ventura County, when No. 16 Lloyd was put on a test after being drilled to 5,280 feet. The company's latest completion, which is just an even mile in depth, is the deepest record to date in this area and is 130 feet deeper than No. 9 Lloyd brought about two weeks ago. No. 16 was a slightly smaller well than No. 9, the initial production being 4,540 bbls. daily and testing 29.1 degrees in gravity. The success which the Associated is experiencing on the Lloyd property has resulted in additional work by the company. There are three wells under way at present, No. 15 at 250 feet, No. 17 at 3,800 feet, No. 18 at 2,645 feet and a rig up for No. 22. The latter will undoubtedly be spudded in within the next two weeks.

The Marland Oil Co. has taken a lease on a part of the Taylor Ranch just north of the field on which the Associated drilled a 5,100-foot hole some time ago, and abandoned it as dry. The Marland figures that the Associated might have stopped just above a deep sand.

Miscellaneous Drilling

The Union is building the rig for No. 1 Newlin at Ocean Park Heights and should finish setting the boilers for this wildcat within the next few days. So far this is the only work undertaken by any of the lease holders in this prospective oil field. The Associated made 1,006 feet of hole in No. 101 Fox Hills at Salt Lake during the past week and drilling is progressing very nicely. The Wilshire is going ahead in its second Bandini wildcat in a gray shale at 5,300 feet and, although there have been no showings to date, the hole will be carried on down.

The Shell is getting quite deep with No. 1 Virginia at Los Cerritos, northwest of Long Beach, the present depth being 4,902 feet and the formation a sandy shale. The Marland has a 3,356-foot hole in its Davidson City wildcat but no showings have been noted to date. The Winwell Oil Co. has landed a string of 6¼-inch in its Hawthorne wildcat at 5,200 feet and will make a test during the coming week. The Manhattan-Pacific Oil Co. was obliged to recement at Hermosa Beach, following an unsuccessful water shutoff on the 8¼-inch at 3,800 feet. The well is showing a little oil and gas but it is quite doubtful whether commercial production will be secured.

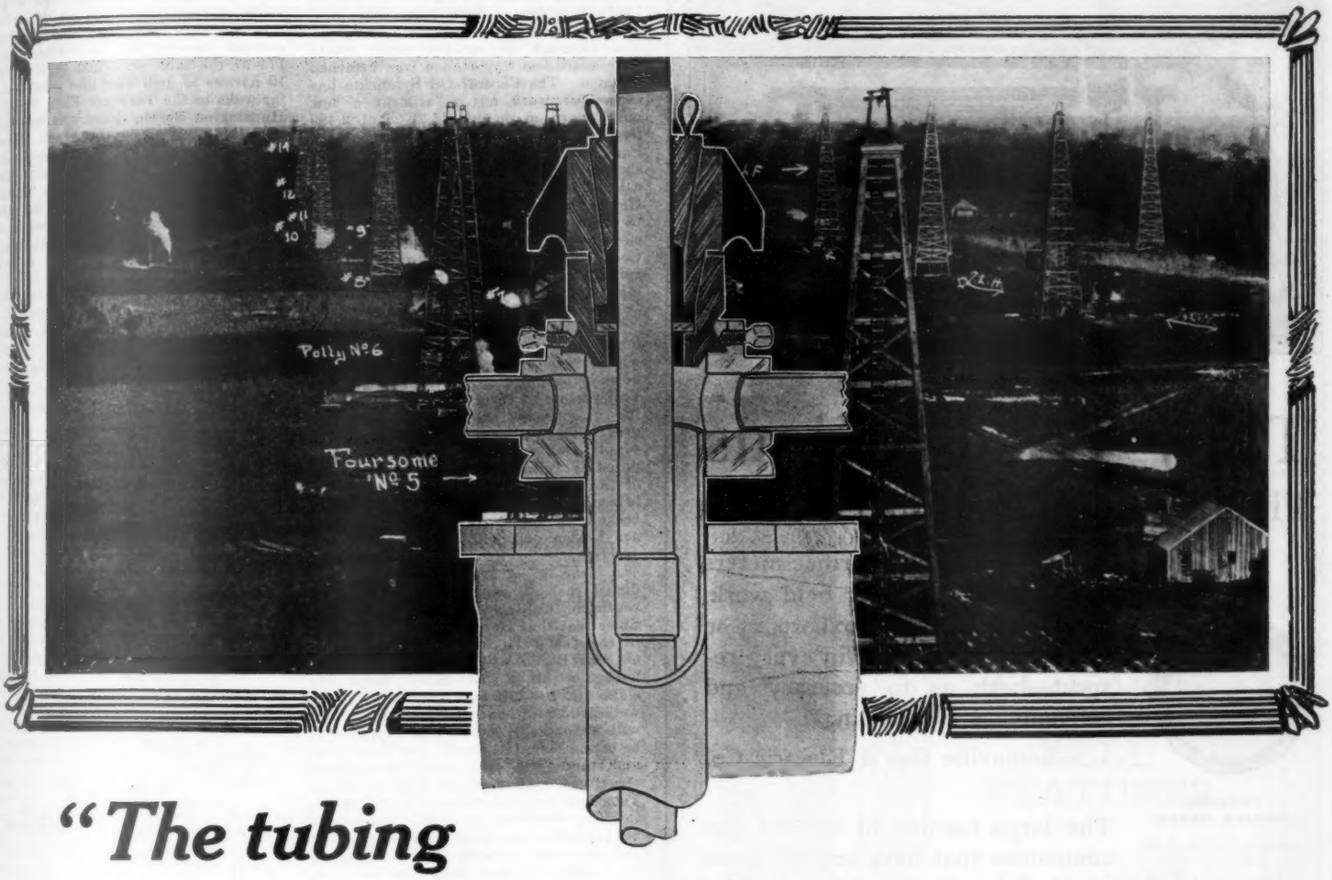
The Associated resumed work on its La Mirda wildcat after a delay of several months and will run in a string of 4¾-inch in this 6,018-foot hole in order that a thorough test may be made before pulling out. The Bixby-Midfield Oil Co. is drilling ahead in No. 1 Duncan at Los Alamitos in a sticky shale at 3,100 feet. There were no developments of interest in the Newhall-Sangus area during the week. The Associated is drilling ahead in its Newhall wildcat in a sandy shale at 3,220 feet but the Union, a few miles away, is still held up at 1,455 feet with a caving hole. The Standard is drilling ahead at 3,900 feet in a sticky blue shale in its San Emidio test on Section 26-22-23 but is being delayed somewhat on Section 5-10-22 around the 1,300-foot level.

The Chanslor-Canfield Midway Oil Co. has completed the new rig over the Sentinel Oil Co.'s Delano wildcat, drilled some time ago to 2,135 feet, but is unable to begin drilling because of the failure of the electric company to get in the necessary power. The Standard seems to have a duster at Lost Hills, Section 5-27-20 and, although 5,300 feet of hole has been made to date, there have been no showings of any kind.

Rio Bravo Showing Doubtful

The Union's Rio Bravo wildcat has reached a depth of 5,404 feet without picking up the pay and, although there is still a possibility of developing production, the odds are much greater after

MILDREN TUBING SUPPORT



"The tubing be hanged!"

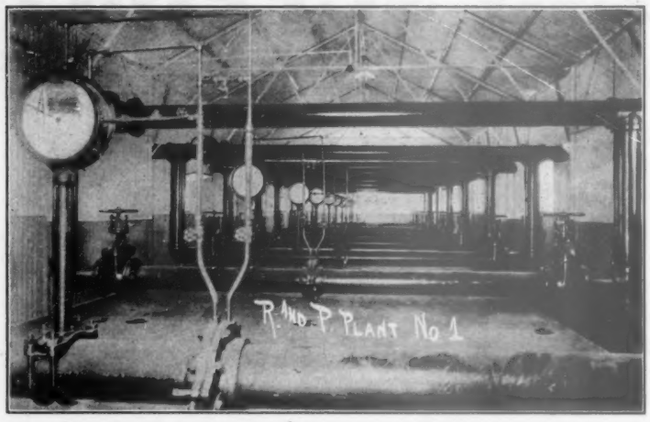
The MILDREN TUBING SUPPORT can be used on flowing or drilling wells, in any size or make of casing head and positively prevents a string of tubing from being dropped, due to causes originating above the casing head.

The MILDREN TUBING SUPPORT increases the factor of safety in running tubing and is used extensively for setting up tubing couplings and insures the accurate setting of a Packer at any depth in the hole.

Illustration at top shows the Mildren Tubing Support as applied for use in the casing head. The Mildren Tubing Support is safeguarding the investments of large oil companies in all parts of the country.

HINDERLITER TOOL COMPANY
Tulsa, Oklahoma
Manufacturers of and Specialists in
Drilling and Fishing Tools
BRANCHES IN PRINCIPAL OIL FIELDS

HINDERLITER

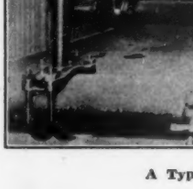


A Typical Foxboro Orifice Meter Installation

They Tried 4 Kinds
Then Standardized on Foxboro

"Of four different kinds of orifice meters which we have used in our field work, we have found the Foxboro to be the most satisfactory in every respect—both as to accuracy and convenience in handling."

—Louisville Gas & Electric Co.



FOXBORO ORIFICE METER

Ranges 0-20 in., 0-60 in., 0-100 in. differential. All static ranges from full vacuum to 1000 lbs. pressure. For use with casinghead gas, natural gas, still vapors, steam, air, oil and water.

The large number of oil and gas companies that have settled down to Foxboro Orifice Meters after experimenting with all types of meters—not alone orifice meters—indicates that there is nothing unusual in the experience of the Louisville Gas & Electric Company.

It may, however, serve to point out to those who have not yet become familiar with Foxboro Orifice Meter performance that much time, trouble and expense may be saved by standardizing on Foxboro Meters at the outset.

Bulletin O 113-1 explains why, in detail. May we send you a copy?

THE FOXBORO CO., Inc.

Neponset Ave., Foxboro, Mass., U.S.A.

213 South Cincinnati Ave., Tulsa, Okla.

New York Chicago Boston Philadelphia Pittsburgh Cleveland
Rochester Birmingham Los Angeles San Francisco Portland, Ore.

FOXBORO

REG. U. S. PAT. OFF.

THE COMPASS OF INDUSTRY

116

passing the 5,000-foot level and for this reason it has been classified as extremely doubtful. The Pan American has considered a 5,000-foot hole a satisfactory test on the Kern River Bluffs and is abandoning its No. 1 Parkford on Section 13-29-29 as dry at 5,020 feet. This well never exhibited any real good showings and, although one or two minor colors were noted, no importance was attached to them. The Central Oil Syndicate has suspended work on its wildcat a few miles away on Section 36-28-28 at 2,499 feet and, in view of the failure of the Pan American to develop production, it should not be surprising if the Central called it quits. The Marland and St. Helens, however, are still going ahead in their respective tests. The former is cleaning out its 2,060-foot hole on Section 36-28-28, while the St. Helens is going ahead on Section 14-29-28 at 3,800 feet.

Wildcatting Active

There is considerable wildcatting being done throughout the entire State and, while there are a good many prospect holes being put down in the San Joaquin Valley none of them really looks promising at present. Geologists claim that area holds California's future petroleum supply and, while this claim is not disputed by well informed oil men, many are of the opinion that it will be some time before any number of fields are developed because of the fact that the structures are hidden and will require minute inspection.

A year or so ago is was freely predicted that all the major structures in southern California had been tested. Since that time Rosecrans has been added to the field's list and another new field at Seal Beach will be brought into existence within a short time. Some may claim that California has been fairly well drilled up but the next few years will undoubtedly prove this assertion to be erroneous. California is a large State and there are still many undeveloped structures both north and south of the Tehachapi and unless the law of averages fails to function in 1925 there will be at least one new field discovered. Just who will have the honor of bringing in California's next field remains to be seen, but, judging by the amount of wildcatting being done, the honor might fall to some independent operator. It has been many years, however, since anyone, except the Big Five, has opened up a major structure. It is easy, of course, to comprehended why this condition is true if a few moments are taken to consider the resources and trained personnel of the large companies. At the present time practically all of the major companies in California are wildcatting and it is fair to assume that one of them will open up a new field during the course of the current year.

The Shell has passed the 3,900-foot level in its No. 1 Mountain View in the Weed Patch area and, since there have been no surface showings, a duster would not be surprising. The Main Oil Co. is drilling ahead at 4,661 feet at Wasco and, although considerable gas has been found at various times, the sand has not yet been picked up. The Snowolene has suspended operations on its Jacalitos Dome wildcat near Coalinga after going to 4,025 feet. It is believed that the suspension is only temporary, in view of the fact that nothing can be expected above 5,000 feet in this area. It has been reported, however, from time to time that the Snowolene was in financial trouble but this has not been confirmed.

The General Petroleum is making good progress in overcoming the fishing job which developed in its Kettleman Hills wildcat at 6,197 feet. The major portion of the drill pipe lost has been recovered and the prospect of resuming drilling before long is good. The Marland is in a blue shale at 4,780 feet on Section 12-22-17, a few miles away, and this hole will be watched closely from now on as it is nearing the projected depth of the oil sand. E. J. Miley picked up a small surface showing in No. 1 Smith in San Luis Obispo County, Section 22-31-21, around 1,440 feet and, although the showing was only of a minor character, it was quite encouraging. The Oak Ridge is drilling ahead in a brown shale on Section 4-25-12 at 3,525 feet but conditions do not look any too encouraging at present.

Field Operations

Oil field operations reported to the State oil and gas inspector show 19 new wells started, the same as during the previous week, bringing the total for the current year to 104, as compared with 174 at the same date last year. Of the 19 notices to drill filed this week, 3 were for wells in the Torrance Field, 1 each in Huntington Beach, Rosecrans, Salt Lake, Whittier, Inglegood, Ventura County, San Bento County, San Mateo County, Santa Barbara County and 7 in the fields of Kern County. There were 29 water tests made, as compared with 34 during the preceding week. Deepening or redrilling jobs totaled 9 and abandoned 5. Permits were issued for the following new wells:

Torrance
Location, Company, Well—
Standard Oil Co.—
23-4-14 Domingues 12.
Superior Oil Co.—
30-4-13 Torrance 59.
30-4-13 Torrance 61.
Huntington Beach
Standard Oil Co.—
2-6-11 Huntington Beach 30.
Rosecrans
Julian Pet. Corp.—
7-3-13 Athens Comm. 2.
Salt Lake
Associated Oil Co.—
25-1-15 Fox Hills 101.
Whittier
22-2-11 Whittier-Strong Oil Co. 3.
Inglewood
Pan-American Pet. Co.—
17-21-4 Sentuous 2.
Ventura County
Shell Co.—
28-3-23 Taylor 8.
San Benito County
Henry Harper 1.
San Mateo County
16-6-5 C. C. Julian & Co. 4.
Casmalia
Union Oil Co.—
9-34 Escolle 15.
Elk Hills
Standard Oil Co.—
31-30-25 Kern Co. Lease No. 1 21.
Midway
32-31-24 General Pet. Corp. 10.
24-31-23 Balboa Oil Co. 46.
St. Helens Pet. Co. Ltd.—
1-32-24 Miller & Lux 1.
25-31-23 Pacific Oil Co. 67.
31-31-24 Pacific Oil Co. 60.
Wheeler Ridge
Standard Oil Co.—
28-11-20 Kern Co. Lease No. 2 18.

The following holes were abandoned:

Torrance
C. C. M. O. Co.—
14-4-14 Torrance 19.
14-4-14 Torrance 20.
Santa Fe Springs
Union Oil Co.—
6-3-11 Alexander 9.
Huntington Beach
McKeon Drilling Co.—
2-6-11 Wilkes 1-A.
Elk Hills
34-30-24 Belridge Oil Co. 4.

GULF COAST

(Continued from Page 44)

both foreign controlled companies. Now they are in use by the Gulf Production, The Texas Co., Marland Oil & Refining Co., and others. Most geologists favor their use and claim that they have learned more about coastal formations during the past year than ever before.

The instruments are covered by German patents, controlled by the Stinnes interests and they are accompanied by crews, most of whom are Germans, who operate the instruments and make the deductions. The Roxana and Ryende companies own their own machines.

South Liberty Operations

The one well in the new South Liberty development is making about 350 bbls. per day and is being handled by the Swiftsure Petroleum Co., running into steel storage. The company is building one 55,000-bbl. tank now and rushing work on its 6-inch line to Barber Hill, a distance of 16 miles. The oil will be barged from Cedar Bayou to Texas City.

Mills Bennett's No. 1 Pickett is drilling at 3,165 feet and should be a completion during the week. No. 2 Pickett is around 2,145 feet and No. 3 at 1,615 feet. Nos. 1 Brown and 1 Rivere are both rigging to start drilling. The Humble Oil & Refining Co.'s No. 2-B Rivere is at 1,543 feet and No. 1 Pickett is at 1,365 feet. No. 1 Chambers is around 1,345 feet. The Vacuum Oil Co.'s No. 1 Bennett is at 1,360 feet, with No. 2 Bennett below 890 feet and No. 1 Rivere rigging. The Gulf Production Co.'s No. 1 Vanderveter is at 1,765 feet. The Bashara Oil Co.'s No. 1 E. Pickett is drilling at 2,035 feet. Locations have been made for Nos. 2, 3, and 4 Pickett

The Oxford Oil Co.'s No. 1 Harrison is at 2,039 feet. The Monarch Oil & Refining Co.'s No. 1 Harrison is drilling around 1,235 feet with a derrick for No. 2 Harrison. The Hofer Oil Co.'s No. 1 Pickett is drilling below 1,355 feet. Locations have been made for Esperson Oil Co.'s No. 1 Baldwin and F. W. Long's No. 1 Andrew. This makes 12 wells drilling there and nine starting. Some title suits have already been filed at Liberty. The development is 3 miles south of the county seat, in the Trinity River bottom lands. The pay in the Winifree Oil Co.'s No. 1 Pickett, the discovery well, was found around 3,365 feet. The bit went into 12 feet of sand and was pulled out, so that the thickness of the sand is as yet unknown. It is probable the tests now drilling will follow the example of the discovery well and not drill through the sand, if they find it.

Application has been made to the State Land Department by L. H. Bailey of Houston, to file on Day Lake, a swamp southeast of the well.

Drilling in the Pools

In the Batson Pool, the Gulf Production Co.'s No. 162 Wing is at 675 feet and the Paraffin Oil Co.'s No. 48 at 545 feet. The Acorn Oil Co. is rigging No. 52 Paraffin.

In the Saratoga Pool, the Sun Oil Co.'s No. 58 Texas Crude is at 785 feet. The Rio Bravo Oil Co.'s No. 3 Bryant is below 2,415 feet. The Regna Oil Co.'s No. 1 Petty is around 875 feet and the Skinner Oil Co.'s No. 1 Hooks at 1,175 feet. The Gulf Production Co.'s No. 23 BBBC is drilling below 985 feet.

In the Spindletop Pool, the Gulf Production Co.'s No. 211 Gladys is at 766 feet. Ellis & Lancaster's No. 1 Birling is drilling at 876 feet. The Baker Oil Co. has a derrick standing for No. 11 White.

At Pierce Junction, Snowden & McSweeney's No. 8 Cain is fishing for the liner and the Texas Exploration Co. is preparing to work over old wells on the Fitzsimmons.

In the Big Creek Pool, the Gulf Production Co.'s No. 17 Davis is drilling at 2,210 feet and No. 18 Davis at 655 feet. No. 9 Wheat is at 2,718 feet. The Texas Co.'s No. 1 Lingua is drilling at 1,790 feet.

At West Columbia, the Humble Oil & Refining Co.'s No. 15 Pipkin-Lee is at 776 feet and No. 2 Wilson is rigging. The Hyde Production Co. has a location for No. 7 McGregor.

Hamm & Co. has location for Nos. 2 and 3 Bryan at Damon Mound.

In the Goose Creek Pool, the Humble Oil & Refining Co.'s No. 1 on Hog Island, in the bay, is drilling around 2,100 feet. The Southern Exploration Co.'s No. 2 Wright is at 2,435 feet and No. 9 is around 1,010 feet. No. 10 is rigging. The Inca Production Co.'s No. 2 Duke is idle at 3,500 feet. The Hisgen Petroleum Co.'s No. 2 Busch, northwest of production, is at 4,430 feet.

The Gulf Production Co.'s No. 10 C. Galliard, 2 Busch and 30 Beaumont are rigging to drill deeper. A location has been made for No. 32 State Land in the bay. No. 17 State Land is drilling at 3,340 feet and No. 1 Hirsch-State Land is deepening at 4,330 feet. No. 18 J. Galliard is deepening at 4,135 feet. No. 5 Houston-Smith is at 3,323 feet. No. 4-A Wright is around 2,290 feet and No. 3 Paddock below 1,765 feet.

Hull Pool

In the Hull Pool, the Republic Production-Houston Oil Co.'s joint No. 8 Dolbear is working over. No. 56 is doing the same at 2,355 feet. No. 101 is drilling at 2,415 feet and No. 102 at 765 feet with No. 103 rigging up. The Humble Oil & Refining Co.'s No. 10 Guedry is at 2,865 feet. No. 1 Merchant is at 3,968 feet. The Eagle Point Oil Co.'s No. 2 is at 2,890 feet. The Higgins Oil & Fuel Co.'s No. 4 Taylor is drilling at 2,785 feet. The Texas Co.'s No. 1 Hannah is drilling at 756 feet with a derrick standing for No. 2. The Yount-Lee Oil Co.'s No. 5 Stengler is at 2,765 feet and No. 6 is at 1,185 feet. The Empire Gas & Fuel Co.'s No. 16 Barngrover is rigging up to work over. The Houston Production Co.'s No. 8 Taylor is at 1,435 feet with No. 9 rigging up.

The Gulf Production Co.'s No. 14 and 30 Phoenix are both deepening. No. 46 Phoenix is at 2,875 feet and No. 47 at 955 feet. No. 14 Scarborough is drilling at 3,560 feet and No. 15 is around 3,400 feet. No. 20 Morris-Phillips is at 1,345 feet. No. 14 Hannah is drilling around 3,000 feet and No. 12 Baldwin is rigging.

South Louisiana Pools

In the Edgerly Pool, the Roxana Petroleum Corp.'s No. 1 Hunter is at 3,180 feet and G. W. Gray's No. 11 Lilliard is at 2,380 feet. The Gulf Refining Co. is rigging to drill No. 36 Bright-Penn deeper.

In the Vinton Pool, The Texas Co.'s No. 1 B. Gray is at 3,570 feet and No. 2-A at 2,980 feet. The Vinton Petroleum Co.'s No. 6 Rescue is at 2,345 feet and No. 14 Harmony around 1,455 feet. A location has been made for No. 15 Vincent. Marrs McLean's No. 5 Gray is at 3,380 feet. The Edgerly Petroleum Co.'s No. 2 Lizzo is fishing at 3,825 feet. Its No. 3 Vincent is drilling below 1,200 feet. The Sun Oil Co.'s No. 3 Johnson is at 2,620 feet.

Outside of the pool, the Vinton Petroleum Co. is rigging No. 1 Stark and the Union Sulphur Co. No. 1 Vincent. In Acadia Parish, E. A. Corbett is rigging No. 1 Ross, and Manly & Clark No. 1 Trushell. In Cameron Parish, the Yount-Lee Oil Co. is drilling No. 1 School lands. In St. Mary Parish, the Union Sulphur Co. is drilling No. 1 Gonsoulin. In Ascension Parish, the Empire Gas & Fuel Co. is rigging No. 1 Union Sand Co. lands.

Coastal Wildcats

In Brazoria County, the Gulf Production Co. is rigging No. 1 at Flagg Pond, southwest of the West Columbia Pool, as a formation test. That company is also drilling a similar test on the Burns land, 4 miles west of the town of Brazoria. Gayle and others' No. 1, 6 miles south of Angleton, is below 1,650 feet.

At High Island, in Galveston County, the Gulf Production Co.'s No. 2 Smith is drilling at 2,785 feet and the Sun Oil Co.'s No. 2 B. & O. is below 3,175 feet.

At Big Hill, in Jefferson County, the Houston Oil Co.'s No. 2 Gulf-Pipkin is at 605 feet and No. 5 Staiti is around 3,000 feet. Paggi Brothers' No. 1 Wilson, south of China, is at 545 feet. It is a formation test. The Port Arthur Development Co. is preparing to test a showing in sand in No. 1 near Westbury in the northwestern part of the county, at 2,300 feet.

At Hockley Dome, in Harris County, The Texas Co.'s No. 1 Warren is at 700 feet and No. 2 Warren at 264 feet. The Humble Oil & Refining Co. has leased the Victor Blanco league, south of the deep sand section of the Humble Pool and will drill several tests. The Kane Production Co.'s No. 2, east of Humble, is a formation test. C. T. Rucker is rigging No. 1 near Cedar Bayou, east of the Goose Creek Pool. A location has been made for a test at Seabrook.

At Boling Dome, in Wharton County, the Gulf Production Co.'s No. 3 Felder is drilling at 2,810 feet.

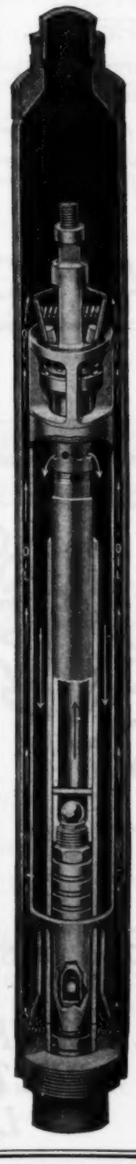
At Shepherd's Mott, in Matagorda County, the Marland Oil & Refining Co.'s No. 1 Murphy is drilling at 4,700 feet. The Shepherd Mound Oil Co.'s No. 1 Hawkins is drilling around 955 feet.

At Barber Hill, in Chambers County, Hindman & Bullock's No. 1 Collier is at 1,435 feet. J. C. White is rigging No. 1 Smith.

At Wisdom Dome, southeast of Damon Mound, near Brazoria, Fort Bend County, the Rycade Petroleum Corp.'s No. 1 Meiser is around 800 feet. Its No. 1 Nash is reaming at 1,840 feet. No. 2 Nash is drilling below 3,345 feet. The Gulf Production Co.'s No. 3 Moore in Fort Bend County is at 1,145 feet. It is a formation test, as is the Pathfinder Oil Co.'s No. 2 Davis, drilling around 1,500 feet. The Humble Oil & Refining Co. has a location for No. 1 Woods.

In the above list, High Island, Big Hill, Hockley, Shepherd's Mott and Barber Hill are all old and known salt domes, around which work has been done more or less persistently for the past 15 years. Flagg Pond, west of Brazoria, Wisdom,

Bell Peerless
(Sand Fighter)
Plunger Pump



A Plunger Pump with steel incased Barrel.

Combination of PLUNGER with BELL FEATURES

PLUNGER protected from SAND

In operation over sixty days in Burbank well—against best time of other Pumps four days.

Ask Your Dealer

BELL PUMP CO.
St. Louis, Mo. Tulsa, Okla.

MAPS
SPECIAL
WE MAY HAVE A STRUCTURE-MAP COVERING YOUR ACREAGE.
Our GEOLOGIC-PLATS cover practically—all of the Mid-Continent Oil Field.
We sell them in single Townships, by the County or in complete sets, in book form.
You will have better success, turning your acreage, if you have Geology.
WRITE OR CALL
GEOLOGIC-OIL-MAP-CO.
226 KENNEDY BLDG. PHONE 2-7342 TULSA, OKLA.

Call for
"IWANA"
HAIR BELT
And Get the Best By Test
BETTER BELT SERVICE
LONGER BELT LIFE
IWANA HAIR BELT
FENWICK-REDDAWAY MFG. CO.
CAMEL'S HAIR, COTTON AND LINEN PRODUCTS
Office and Factory: NEWARK, N. J.
Tulsa Representative: A. F. Campbell, P. O. Box 171

Moore and Davis prospects are recent discoveries of the seismograph or torsional balance system.

In Walker County, the Ridge Oil & Gas Co.'s No. 1 Eastham is around 900 feet. In Waller County, the Humble Oil & Refining Co. has a location for No. 1 Clepper. In Grimes County, McClausland and others' No. 4, near Carlos, is rigging. No. 1 was a gasser, No. 2 abandoned and work is being resumed on No. 3.

Southwest Fields

In Jim Hogg County, the Plateau-Buchanan Oil Co.'s joint No. 2 Martinez came in flowing 2,000 bbls. at 2,035 feet. It is the farthest well to the southwest, offsetting same interests' No. 1 on the west, and Henne, Wich & Fariss' wells on the south. The latter is rigging No. 10 as an offset to the north. Kisselman & St. Alban's No. 3 Holbein is making 2,000 bbls. It is a northeast extension and switches interest in the field to the territory east and south of it. Interest also attaches to the Mirando Oil Co.'s No. 11 in Zapata County, 3 miles northwest of the Jim Hogg County production. It is a test drilled deeper from 1,960 feet to 2,058 feet, where a sand is being cored. Casing will be set and a test made.

The Plateau-T. & P. Oil & Coal Co.'s No. 4 Holbein set casing and No. 5 is drilling. The Plateau-Wheat Nos. 2 and 6 are drilling with locations for Nos. 3, 4 and 5. The Plateau Oil Co.'s No. 3 Holbein set casing at 1,983 feet. Nos. 3 and 4 are drilling with a derrick up for No. 5. The Big Bend Oil Co.'s No. 5 Martinez set casing at 1,900 feet. No. 6 is drilling around 1,235 feet. Nos. 7, 8, and 9 are rigging. The Magnolia Petroleum Co. is drilling No. 4 Thompson. The Witherspoon Oil Co.'s No. 4 Holbein set casing and a derrick is standing for No. 5. The Weber Oil Co.'s No. 4 Holbein is drilling below 3,000 feet.

Luling Field

In the Luling Field, on the Caldwell County side, the United North & South Oil Co. finished Nos. 9, 10 and 11 Trammel, each making 200 bbls. on the pump. The Beauchamp Petroleum Co. set casing in No. 3 Fields. The United North & South Oil Co.'s No. 1 Callahan is reported showing in a sand at about the same depth as in the Field. The B. K. Oil Co. of Austin is rigging No. 1 Fields. On the Guadalupe County side, the United North & South Oil Co. is starting No. 34 Allen.

Ballard & Underwood have started No. 2 Hopkins in Atascosa County, on the southwest side of the Somerset Field. The Noack Oil Co. has started No. 5 Sterlsky in the shallow sand district in Milam County. In Live Oak County, G. B. Pickett is drilling No. 2 Nelson, The Texas Co.'s No. 2 Reagan, Coquet and others No. 1 Hicks, the Southern Natural Gas Co.'s No. 9 and the Grubstake Investment Co.'s No. 3 Nichols. In McMullen County, F. J. Darlington is drilling No. 6 Martin.

In Kleberg County, the Kleberg Oil & Gas Co. has cleaned out No. 1 Kissman, a gas well and turned it into its mains supplying the town of Kingsville. No. 1 Kleberg, the original gas well, quit and left the town without fuel. The company has a location for No. 2 Kissman. The Humble Oil & Refining Co. has three deep tests drilling southwest of Kingsville at depths ranging from 3,600 to 4,000 feet. They are No. 1 King ranch, No. 1 Flato and No. 1 Cross State land. The Humble Oil Co. is reported to have leased 35,000 acres on St. Joseph island, below Corpus Christi, paying a bonus of $8,000.

N. LOUISIANA-ARKANSAS

(Continued on Page 48)

feet; No. 30, Section 6-16-16, set 6-inch casing at 2,220 feet; No. 31, Section 5-16-16, is drilling in rock at 2,295 feet and derrick is up for No. 31 in Section 5-16-16.

Hickman and others have derrick up for No. 8 Graves, Section 3-16-15, and arranging to drill in with cable tools at 2,410 feet in No. 1 Graves, same section. Hollyfield and others are rigging up to drill No. 7 Giller, Section 11-16-15, and Houston Oil Co. has a fishing job at 2,277 feet in No. 1 Miller, Section 3-16-15.

Lion Oil & Refining Co. is rigging up to drill No. 1 Hays, Section 4-16-15 and No. 5 Flenniken, Section 10-16-15, and is running core barrel at 2,298 feet in No. 5 Graves, Section 3-16-15. The Magnolia Petroleum Co. tested dry at 2,265 feet in No. 2 J. G. Smith, Section 2-16-17, got salt water at 2,275 feet and drilling deeper at 2,285 feet.

Murdock and others have derrick up for No. 1 Bilyew, Section 8-16-15, and rigging up to drill No. 3, same section. Natural Gas & Petroleum Co. set 12½-inch casing at 40 feet in No. 6 Murphy, Section 8-16-15.

Pure Oil Co. is rigging up to drill No. 11 Craig, Section 15-16-15, and drilling at 3,520 feet in a deep test on the Lawton lease, Section 30-16-15.

Russell and others are rigging up to drill No. 1 Brown, Section 8-17-14; Standard Oil Co. set 10-inch casing at 120 feet in No. 2 J. H. Alphin, Section 2-16-15, and at 125 feet in No. 16, same section, and the Sunny Jim Oil Co. is arranging to deepen No. 1 Flenniken, Section 9-16-15, now down 2,125 feet.

Unity Petroleum Co. set 12½-inch casing at 42 feet in No. 6 Roper and rigging up to drill No. 7, Section 3-16-15, and Weatherbee ad others set 10-inch at 60 feet in No. 4 Rice, Section 6-16-16.

Ouachita County

More activity is being manifested in Ouachita County, Arkansas, than at any time during the past six months and an interesting and prosperous year is expected throughout this territory. Many old wells are being deepened as a result of the discovery of a second producing sand.

The Arkansas Drilling Co. has started another well on the Reynolds lease, No. 6 in Section 24-15-17, having set 10-inch casing at 40 feet. Bray-Hawthorne are drilling at 2,425 feet in No. 1 Goodwin, Section 12-15-17, and the Cumberland Petroleum Co. has set 6-inch casing at 2,240 feet in No. 4 Reynolds, Section 23-15-17.

Boyd & Bonham have gone back into an old well on the Stringfellow lease in Section 28-15-16, formerly completed as a 1,000,000-foot gasser, and are drilling at 1,990 feet. The Forest Oil Co. is arranging to deepen No. 11 Mullins in Section 27-15-16, formerly reported junked and abandoned at 2,096 feet.

Eillis & Dumas have set 10-inch casing at 60 feet in No. 4 Forest City Box Co., Section 31-15-16, and the Forest Oil Co. is rigging up to drill No. 10 J. A. Cramer, Section 27-15-16.

Foster & McWilliams tested No. 1 Neeley, Section 26-15-16, getting about 2,500,000 feet of gas and a show of oil at 2,020 and 2,030 feet, and will drill deeper; George Freely has derrick up for No. 1 Gibson in Section 26-15-7, and George & Jones are drilling at 1,400 feet in No. 3 Umsted, Section 4-16-15.

Giles and others have 300 feet of salt water in No. 1 Hardin, Section 26-15-16, and are arranging to plug and test casing at 2,105 feet, and have derrick up for No. 1 Neeley in the same section. Gray and others are drilling at 1,910 feet in No. 3 Myar, Section 32-15-16 and the Gilliland Oil Co. is arranging to drill in with cable tools at 2,295 feet in La-Grone B-5, Section 36-15-17, and has set 12-inch at 80 feet in Myar B-5, Section 30-15-16.

Big Drilling Campaign

The Gulf Refining Co. is conducting an extensive drilling campaign throughout the Smackover and Louann districts and has started a number of new wells during the past week. No. 2 S. Bennett in Section 32-15-15, is drilling at 1,700 feet; No. 9 Fincher, Section 33-15-16, is rigged up to drill; No. 1 Burkett, Section 7-15-16, is rigging up to drill; No. 8 Hardin, Section 28-15-16, is rigging up to drill deeper, having been formerly completed at 2,052 feet, making 200 bbls.; No. 3 Reynolds, Section 23-15-17, has set 6-inch casing at 2,245 feet; No. 13 Alphin, Section 2-16-15, has set 6-inch at 1,870 feet, and on the Werner lease No. 32, Section 32-15-16, has set 6-inch at 2,200 feet; No. 33, Section 32-15-16, has set 6-inch at 2,190 feet; in Section 26-15-17, Werner A-8 has set 6-inch at 2,222 feet, A-9

The Cross Cracking Process

With the lowest overall operating cost, the Cross Process has no superior as a money maker.

THE M. W. KELLOGG CO.
90 West St.,
New York City

Branch Offices:
700 Baltimore Ave., Kansas City, Mo.
19th and Harrison St., San Francisco, Cal.
304 Lane Mortgage Building, Los Angeles, Cal.

A Part of the Famous Barsco Products

Saw Tooth Rotary Shoe

Drive Shoes
Casing Shoes
Casing Clamps
Anchor Clamps
Gas Packing Clamps
Rotary Tool Joints
Male & Female Steel Nipples
Shoe Guides

Baker Pattern Casing Shoe

New Catalog just off the press
Write for copy

Gas Packing Clamp, Regular Pattern

Bartlesville Supply Co. of Mo.
3400 Maury Ave., St. Louis, Mo.
Mid-Continent Representatives:
B & A Specialty Company, 311 W. 1st Street, Tulsa, Oklahoma
Stocks carried by Dealers and Nichols Transfer & Storage Co., Tulsa, Oklahoma, for your convenience.

Shoe Guide

S E R V I C E

SPENGLER
COMPLETE CORING SERVICE AVAILABLE EVERYWHERE

IN many instances formation data obtained from SPENGLER CORES has shown supposedly "barren" areas to be capable of profitable production. Are you passing up profits?

Phone, Write or Wire

SPENGLER
CORE DRILLING COMPANY
A. G. Bartlett Bldg. LOS ANGELES Phone Met. 7714
128 & Main Sts. Rosecrans Tel. Compton 1153 & 1301
Taft, California Phone 81

R E S U L T S

METERS

For Measuring Production and Distribution of

Oil–Gasoline–Gas

and Other Fluids

Please note change of address

PITTSBURGH METER COMPANY

General Offices and Works:
7800 Susquehanna St., PITTSBURGH, PA.

SALES OFFICES:

New York—50 Church St.
Chicago—5 South Wabash Ave.
Kansas City—Mutual Bldg.
Columbia, S. C.—1433 Main St.
Seattle—4038 Arcade Bldg.
Los Angeles—Union Bank Bldg.

is drilling at 1,840 feet, A-10 is drilling at 1,810 feet, and A-11 is a derrick. Locations have been made for Werner 36 and 37 in Section 32-15-16.

Howell and others have set 6-inch casing at 1,885 feet in No. 4 Williams, Section 3-16-15; H. L. Hunt and others are swabbing to test 58 feet of sand at 2,330 feet in Green B-6, Section 23-15-17; has 1,500 feet of oil in the hole and is arranging to pump No. 3 Halton, Section 23-15-17, at 2,375 feet; has derrick up for C-11 Halton; rigging up to drill C-12, and set 6-inch casing at 2,272 feet in C-13, Section 26-15-17; drilling at 1,900 feet in No. 1 Riley, Section 22-15-17; set 10-inch at 67 feet in No. 3 Street, Section 26-15-17, and has 500 feet of oil in the hole and is arranging to pump No. 4 Street at 2,357 feet, and has derrick up for Myatt B-5 in Section 26-15-17.

Kelly and others have made a location for No. Wells in Section 23-15-17; J. W. King is bailing casing at 2,270 feet in No. 2 Jackson, Section 27-15-16; Kourey and others have 700 feet of oil in the hole and are building standard rig to pump No. 1 Churchyard, Section 28-15-16, at 2,068 feet, and Leon and others have set 12½-inch casing at 500 feet in No. 2 Berg, Section 4-16-15.

The Magnolia Petroleum Co. has set 6-inch casing at 2,277 feet in No. 1 Bettie Clawson, Section 35-15-17; the Mazda Oil Co. has 200 feet of oil at 2,000 feet in No. 2 Berry, Section 33-15-15, and is arranging to pump, and McCorkle and others have derrick up for Smith A-2 in Section 25-15-17.

To Deepen Old Well

The Penguin Oil Co. has taken over an old well drilled by the Union Sulphur Oil Co. last year, making 250 bbls. at 2,026 feet, and is arranging to deepen. The well is on the Hardin lease in Section 27-15-16; No. 2 Hardin is drilling at 2,255 feet.

J. D. Reynolds is rigging up to drill No. 5 Ward in Section 25-15-17; Riggs and others are drilling at 2,315 feet in No. 2 Green, Section 23-15-17; the Simms Oil Co. has set 6-inch casing at 2,015 feet in Berg E-3, Section 30-15-15; J. S. Smith is arranging to test Shirey A-2 in Section 35-15-17, and the Sun Oil Co. is drilling at 1,825 feet in No. 4 Hardin, Section 27-15-16.

The Sure Oil Co. has set 12½-inch casing at 60 feet in No. 1 Snyder, Section 34-15-15. The Texas Co. has 900 feet of oil in the hole at 1,965 feet in No. 2 Johnson, Section 3-16-15, and is arranging to pump; No. 4 Reynolds, Section 23-15-17, has 1,000 feet of oil in the hole and will put to pumping at 2,322 feet, and No. 6 is drilling at 2,330 feet; No. 7 Berry, Section 33-15-15, has set 6-inch casing at 1,885 feet and derick up for No. 8 in the same section.

Timberlake and others have derrick up for No. 2 Green in Section 23-15-17, and are rigging up to drill No. 3 in the same section; Whittaker and others have 1,000 feet of oil in No. 1 Green, Section 23-15-17, and are arranging to pump at 2,380 feet, and have derrick up for No. 2 in the same section, and Whittiken and others are swabbing at 2,298 feet in No. 5 Anderson, Section 23-15-17, and have set 10-inch casing at 60 feet in No. 2 Hodges, Section 26-15-17.

Sid Umsted has set 12½-inch casing at 45 feet in No. 1 Jones, Section 26-14-17, and the Unity Petroleum Co. is rigging up to drill No. 3 Berry in Section 33-15-15.

Columbia County

The Magnolia Petroleum Co. is making a deep test in the Stephens Field, No. 2 Watson, Section 26-15-20, in which it is drilling at 3,070 feet.

Nevada County

In the Nevada County Field, the Autry Oil Co. is rigging up to drill No. 5 Womack in Section 10-14-21, and in the same section Ames and others are bailing 6-inch at 1,172 feet to test No. 2 Womack; Greason and others tested dry at 1,250 feet in No. 1 McKinney, and are arranging to drill deeper; Smitherman & McDonald have set 10-inch casing at 42 feet in No. 7 McKinney, and Zing and others are drilling at 1,000 feet in No. 1 McKinney.

Bienville Parish, North Louisiana

The Roxana Petroleum Corp. is drilling in shale at 2,565 feet in No. 1 Bryan, Section 30-17-6, 8 miles south of Gibland.

Bossier Parish

In the north end of Bossier Parish, in the Springhill district, the Arkansas Natural Gas Co. is drilling in line at 2,050 feet in No. 1 Bolinger, Section 32-23-11, and G. W. Wetherbee has set 6-inch casing at 2,625 feet in No. 1 Holland, Section 4-22-11.

In the Elm Grove district, the Palmer Corp. has set 10-inch casing at 240 feet in Hodges B-8, Section 25-16-12.

McClure & Ferrell have set 6-inch casing at 1,000 feet in No. 1 Atkinson, Section 4-18-12, 6 miles northeast of Shreveport.

Thigpen & Herold are drilling in chalk rock at 1,820 feet in No. 1 Berstein, Section 11-20-13, 4 miles northeast of Benton.

In the Bellevue Field, Osborne and others have gone back into their No. 1 McDade, abandoned as a dry hole at 575 feet in July, 1923, and are arranging to drill deeper.

Caddo Parish

In the old Caddo Field, west of Lewis, W. D. Chew is drilling at 1,650 feet in No. 3 fee, Section 27-21-16, and in the same section, the Standard Oil Co. is drilling at 1,150 feet in No. 170 Stiles.

In the Pine Island district, the Dixie Oil Co. has set 4½-inch casing at 3,450 feet in its deep test, Noel B-1 in Section 24-21-15, and the Fortuna Oil Co. is drilling at 3,165 feet in No. 10 Robertshaw, Section 23-21-15; the Ohio Oil Co. has derrick up for No. 16 E. K. Smith in Section 7-21-14; The Texas Co. is down 3,009 feet in No. 43 Caddo Mineral Land Co., Section 23-21-15, and the Tholl Oil Co. has set 6-inch casing at 1,385 feet in No. 9 Bashara, Section 23-21-15.

In the Caddo Lake district, W. M. Gross and others are drilling in chalk rock at 1,435 feet in No. 2 H. Rives, Section 5-20-16; the Gulf Refining Co. is bailing 6-inch at 2,050 feet in No. 221 Ferry Lake, Section 21-20-16, and The Texas Co. has derrick up for No. 19 Russell, Section 3-20-16.

Haynes Brothers are drilling at 2,150 feet in No. 1 Louisiana Live Stock & Plant Co., Section 8-19-16, 6 miles southwest of Mooringsport.

In the Waskom district, A. C. Scott and others are rigging up to drill No. 1 Stringfellow in Section 19-17-16.

The Proven Production Co. tested dry at 2,015 feet and is drilling at 2,035 feet in No. 1 Agurs, Section 6-16-16, between Greenwood and Bethany.

Flournoy, trustee, is rigging up to drill No. 1 Simpson in Section 8-16-15, 7 miles northeast of Bethany.

The Fortuna Oil Co. is rigging up to drill No. 1 Mitchell in Section 17-18-16, 4 miles west of Cross Lake.

The Texas Co. is rigging up to drill No. 3 Huron Land Co. in Section 8-15-12, in the south end of the Elm Grove gas district.

Claiborne Parish

The Claiborne-Lincoln Syndicate is testing 5 feet of sandy shale at 2,235 feet in No. 3 Fields, Section 22-19-5, 5 miles northeast of Arcadia.

Clark & Melat are drilling at 1,300 feet in No. 1 Heard, Section 5-21-6, 4 miles northeast of Homer.

J. P. Evans and others are drilling in lime and shell at 2,800 feet in No. 1 Taylor, Section 5-19-5, 12 miles southeast of Homer.

De Soto Parish

The Texas Co. has set 8-inch casing at 920 feet in No. 30 Christine, Section 6-12-11, in the east send of the Naborton district.

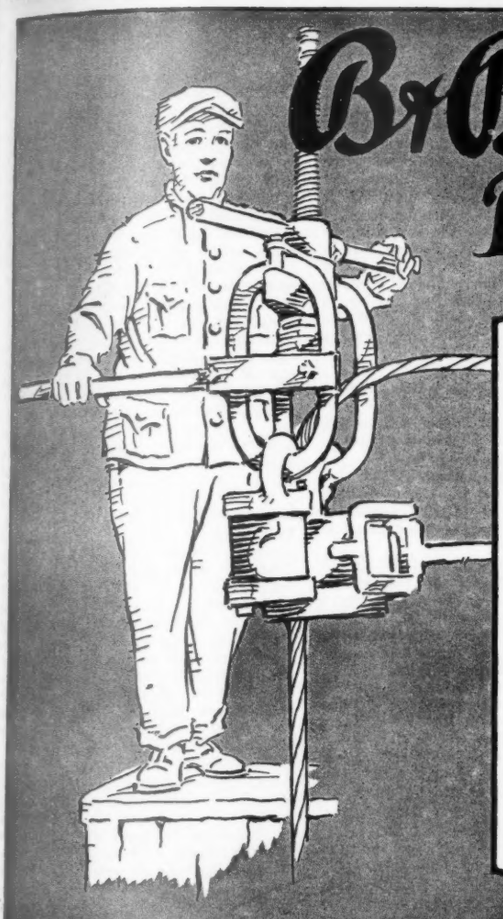
L. V. Ulrey has set 6-inch casing at 2,890 feet in No. 1 Robinson, Section 22-11-12, 3 miles north of Pelican.

La Salle Parish

The Gulf Refining Co. is drilling at 1,500 feet in Urania A-1, Section 22-11-2e, the Stovall Drilling Co. at 1,830 feet in No. 2 Louisiana Central Lumber Co., Section 27-10-2e, and the Urania Petroleum Co. is trying to pull 8-inch casing at 1,510 feet in No. 5 Urania, Section 18-10-2e.

Morehouse Parish

The Natural Gas Producing Co. is rigging up to drill No. 15 Crossett, in Sec-



B & B Non-Kinking Drilling Lines

You Can't Cure Kinks

What can't be cured must be *prevented*. Ward off fatal kinks by putting on B & B Non-Kinking Drilling Line, so soft laid that it flops flat on the derrick floor.

In action, no stronger, *springier* cable ever hung from the beam than B & B Non-Kinking Drilling Line. Makes hole faster. Keeps at it longer. Costs less for the work you get out of it. Far cheaper than "fishing."

Standard B & B Drilling Lines made for every field. Also manufactured to your special order.

Write for Catalog K-2 and name of nearest distributor.

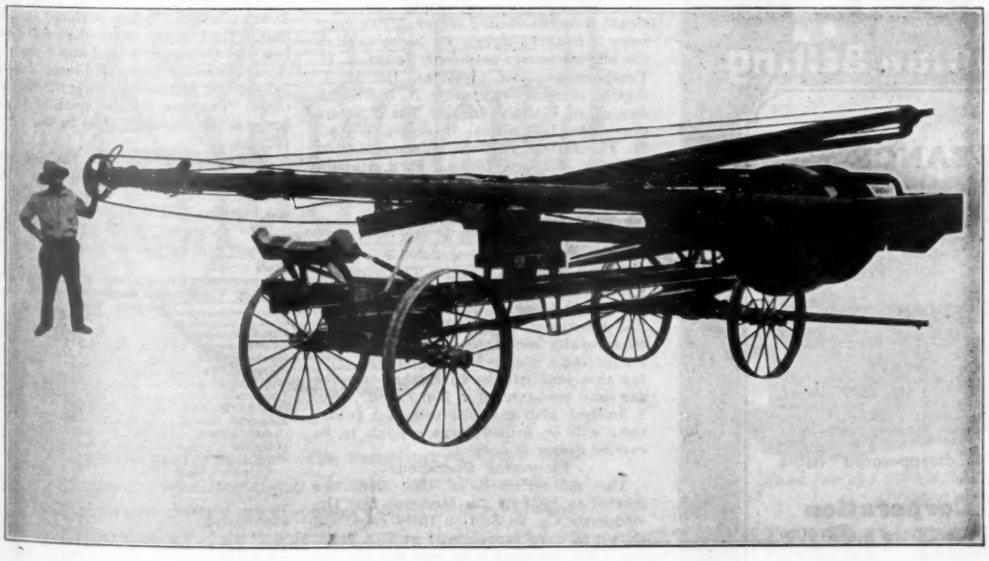
BRODERICK & BASCOM ROPE CO.
ST. LOUIS, MO.

Branches:
76 Warren St., New York
Seattle

Factories:
St. Louis
Seattle

G265

Saves Dollars, Time and Temper



Ever have a guy pin pull out, a rope or block break, or have the horses fail to stop, when you were raising a pulling machine and have it crash to the ground in a broken heap? Of course you have if you are an old timer in the oil game, or else you've been mighty lucky. It's hard on the temper, hard on the pocketbook, and usually hard on the well that has to stand until repairs can be made or another machine secured.

NO CHANCE

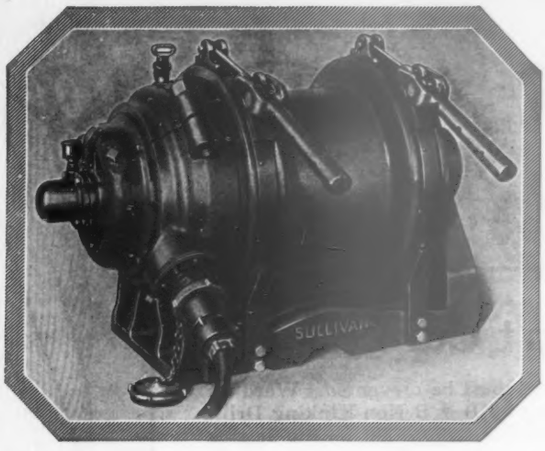
for this to happen with an IRON KING. One man, unaided by team, places it into position and raises it, WITHOUT FASTENING A SINGLE GUY LINE AND HE CANNOT PULL IT OVER.

If your oil well supply store will not get you an IRON KING write us direct. Let us send you our catalog.

THE IRON KING MANUFACTURING CO.

BRADNER, OHIO

Say you saw it in The Oil and Gas Journal



A NEW ELECTRIC HOIST

(Portable)

Sullivan engineers have designed a new portable hoist, electric motor driven. It is similar in power, size and adaptability to the Sullivan "Turbinair" Hoists which have become so popular, and both single and double drum models are available.

Sullivan Electric Hoists have 6½ H. P. motor, mounted in a tight casing inside the drum. Reduction gears and bearings are enclosed and splash oiled Ball and roller bearings throughout.

You can hoist a ton vertically on single line, or pull a 50-ton car on level track. The double drum hoist is compact and easy to handle for two rope jobs such as boom derrick work or car spotting.

If you want to reduce your light hoisting and haulage costs, try these new electric units.

Electric Hoist Dimensions

	1 Drum
Length, inches	29
Width, inches	15
Height, inches	19¼
Drums, length, inches	8¼
Drums, diameter, inches	11⅛
H. P.	6½
Capacity, lbs.	2000*
Speed at Max. Load, ft. per Min.	110
Drum Rope Capacity, ft. each	500
Weight, pounds	430

*For Vertical lift. Catalog 1576-E

SULLIVAN MACHINERY CO.

88 East Adams Street, Chicago

Approved for Field and Refinery Service

Stanley

Solid Woven Cotton Belting

"LONG DISTANCE CALLING"

One of our men whose duty it is to hope STANLEY belts will wear out faster—when he knows darn well they won't, got an order a few days ago for 2,600 feet of belt from a new field, *by 'phone.*

A nice order to get on the telephone—you bet! But what was behind it?

Just this—*the man who placed the order knew what STANLEY would do.*

Only selected long staple cotton is used in STANLEY SOLID WOVEN COTTON BELTING. Its tight-twisted, strong threads are woven into one unit without plies in our famous hinge weave. Special impregnation gives the belt a high resistance to oil and water. Stands warehousing without deterioration. Does not break at the clamp.

No man has ever been disappointed in a STANLEY belt.

Stanley Belting Corporation

New York Chicago Toronto

W. R. Tucker 5311 Richard Ave., Dallas, Texas Telephone H6525

T. R. Bartlett, P. O. Box 909 Tulsa Phone Dial 2-7283

On permanent display at Tulsa Industrial Exhibition

Pacific Coast Rubber Co. 316 Mission St., San Francisco, Cal.

Mountain States Rubber Co. 1238 Broadway, Denver, Colo.

tion 20-22-5, and has derrick up for No. 16 in Section 15-22-5.

Ouachita Parish

Dickson & Frue are drilling at 2,310 feet in No. 1 Goodwin, Section 24-18-2e; W. C. Feazel has set 6-inch casing at 2,140 feet in No. 1 Richland, Section 14-19-4e; Ladel and others have set 6-inch at 2,110 feet in No. 32 fee, Section 10-19-5e, and Montgomery and others are drilling in gumbo at 1,705 feet in No. 1 McHenry, Section 12-19-4e.

The Southern Carbon Co. is drilling at 2,160 feet in No. 44 fee, Section 7-19-5, and drilling at 1,015 feet in No. 45 in the same section; the Standard Carbon Co. is drilling at 1,600 feet in No. 1 Swartz, Section 6-19-5, and J. P. White and others are drilling at 1,025 feet in No. 1 Jones, Section 6-16-5e.

Union Parish

The Simms Oil Co. is setting 6-inch casing at 2,035 feet to test 1 foot of sand at 2,115 feet in No. 1 James, Section 16-22-3w, 8 miles south of Junction City.

Arkansas Wildcats

Columbia County

The Arkansas Fuel Oil Co. is drilling at 2,000 feet in No. 1 W. E. Hardy, Section 1-19-22, half way between Haynesville and Stephens.

The Magnolia Development Co. has a fishing job at 2,080 feet in No. 1 Phil Lindsay, Section 30-18-19, between Haynesville and Stephens.

Wingfield & Mitchell have set 12¼-inch casing at 42 feet for a test on the Bodcau lease in Section 4-20-21.

Lafayette County

The Kensaw Petroleum Co. is drilling at 1,875 feet in No. 2 Red River Land Co., Section 3-20-24.

Miller County

J. K. Wadley is drilling at 1,500 feet in No. 1 Thompson, Section 33-14-28.

CANADIAN FIELDS

(Continued from Page 46)

below the Medicine Hat gas sands. The city is asked to advance the company $20,000 to finance the completion of the well, the city to be secured by a mortgage on the company's drilling equipment and casing. The company undertakes to assign the well to the city, as a gas well, when it reaches 1,400 feet, and to pay the city a royalty of 12½ per cent on any production of crude oil or gasoline.

In the Many Island Lake Field, the Canadian American Oil & Gas Co., with offices at Wallace, Idaho and Medicine Hat, Alta., is planning to drill two additional tests the coming season. This company is financed largely by Idaho capital, the officers being: president, Judge A. H. Featherstone; vice president, Dr. M. T. Smith, secretary-treasurer, N. C. Sheridan, all of Wallace, Idaho. The directors are: Ben L. Collins, Spokane, Wash.; R. F. Collins, Wallace, Idaho; Morton Webster, Wallace, Idaho. F. S. Ratcliff of Medicine Hat is Canadian manager, and B. W. Dunn of Calgary is geologist for the company. No. 1 test on Section 31-13-1w-4 was brought in last year with an estimated gas flow of 2,000,000 feet a day, and is now shut in. The company has a contract with the Sarnia Oil & Gas Co. for the handling of its output in gasoline absorption and carbon black plants on a royalty basis. The company is contemplating a deep test later, but the drilling this year will be to further test the gas sand encountered in No. 1 well. No. 1 finished with a 4-inch hole, but future tests will be drilled large enough to be carried deeper if desired.

Pioneering Operations

The pioneer well in this field was started in 1921 by the Medicine Hat Development Co. on Section 19-14-1w-4. Oil showings were encountered at 732, 1,422 and 1,670 feet and later wet gas was encountered. The best oil showing was that at 1,422 feet, a sample testing: gasoline, 17 per cent; kerosene, 7 per cent; light lubricant, 15 per cent; medium lubricant, 25 per cent; heavy lubricant, 15 per cent; residue, 21 per cent. Following this development, Medicine Hat men organized the Community Oil Wells, Ltd. to make a deep test for oil; and have been working on this test since 1922, drilling a portion of the Medicine Hat Development Co. holdings on a royalty basis. The location is Section 19-14-1w-4 and the well was carried to 2,471 feet with a rotary outfit, though considerable difficulty was experienced in drilling and the operators were never able to land the casing to this depth. Last summer F. H. Stover of Chatham was secured to complete the test and upon cleaning the hole and starting to work he found a crooked hole starting just below the 10-inch casing, around 1,500 feet. A standard rig was installed and a new hole carried down to between 1,700 and 1,800 feet when, owing to the early winter, work was discontinued till next spring. The company is planning to resume early this spring and carry the test to 3,500 feet, if necessary, though it is expected that 3,000 feet of drilling will thoroughly test the possibilities of deep oil. The Snake River Royalty Syndicate has an outfit on Section 20-14-1w-4, but the test has not been carried to any great depth. The Many Island Oil & Gas Co. has a test on Section 34-13-2w-4 which has been carried to 2,600 feet, the deepest hole yet drilled in the Many Island Lake Field. This test has encountered gas at a number of horizons, and the outfit is being run with gas from the well as fuel. The Diamond Drill Contracting Co. of Spokane,, Wash., has a contract for a 3,000-foot hole, and operations will be resumed early in the spring. On the Saskatchewan side of the provincial boundary, the Provincial Oil & Gas Co. of Regina has a rig up and a camp built to start work early in the spring. In practically all these tests, gas has been encountered in varying quantities at different horizons; but the companies operating are primarily testing the deeper horizons for oil.

The Alberta Refining Co. of Cowtx, Alta., at its annual meeting recently elected the following officers: president, L. R. Olsen; vice president, William Boyden; secretary, Ralph Rorvick; treasurer, Douglas Parker, of Sweetgrass, Mont. The directors include Messrs. Olsen, Boyden, Adams, Parker and Siverts. The company will open a distributing station at Lethbridge, Alta.

GULF COAST-S. W. TEXAS PRODUCTION IN JANUARY

HOUSTON, Tex., Feb. 14.—The estimated gross production in the Gulf Coast pools for January is placed at 2,284,681 bbls. All the major pools fell off, as compared to the December output, the most marked decline being in the Goose Creek district, where the loss is placed at 31,995 bbls. Hull shows more than 5,100 bbls. less and Orange averaged about the same. A worked-over hole at Pierce Junction caused an increase of over 35,000 bbls. there. The new district south of Liberty appears for the first time in the computations.

The estimated gross in the Southwest fields is placed at 1,388,056 bbls. While Luling declined, the loss was offset by completions in Jim Hogg County.

The following table shows the daily average and estimated gross for each district:

ESTIMATED GROSS PRODUCTION
Gulf Coast and Southwest Fields for January, 1925

District	Daily Average	Est. Gross Bbls.
Batson	1,596	49,476
Barber Hill	134	4,154
Blue Ridge	663	20,553
Big Creek	429	13,299
Dayton	77	2,380
Damon Mound	1,202	37,262
Edgerly (La.)	589	18,259
Goose Creek	9,139	281,309
Humble	5,042	156,302
Hull	15,339	475,509
Jennings (La.)	719	22,229
Markham	99	3,069
Orange	11,120	344,720
Pierce Junction	1,728	53,560
Spindletop	1,134	35-164
Saratoga	1,474	45,694
Sour Lake	3,729	115,599
Vinton (La.)	5,902	182,962
Welsh-Anse La Bute (La.)	82	2,542
West Columbia	12,508	387,748
South Liberty	370	11,470
Lockport (La.)	481	14,911
Miscellaneous	210	6,510
Total for January	73,766	2,284,681
Southwest Fields		
Luling	30,720	952,320
Laredo	4,186	129,766
Somerset	2,552	79,113
Callihan	2,552	15,941
Rockdale-Minerva	462	14,322
Jim Hogg County	6,345	196,695
Totals for January	44,776	1,388,256

A VETERAN IN THE FIELD

AND why? Only because of the superior service it has offered for over twenty-five years. Note just two of its many advantages:—

1. **The Chain** swings from the center and can be used on either side of Jaws.
2. **Each Individual Flat Link Chain** is "proof-tested" to two-thirds of its catalogued breaking strain and certified. This assures safety to the operator.

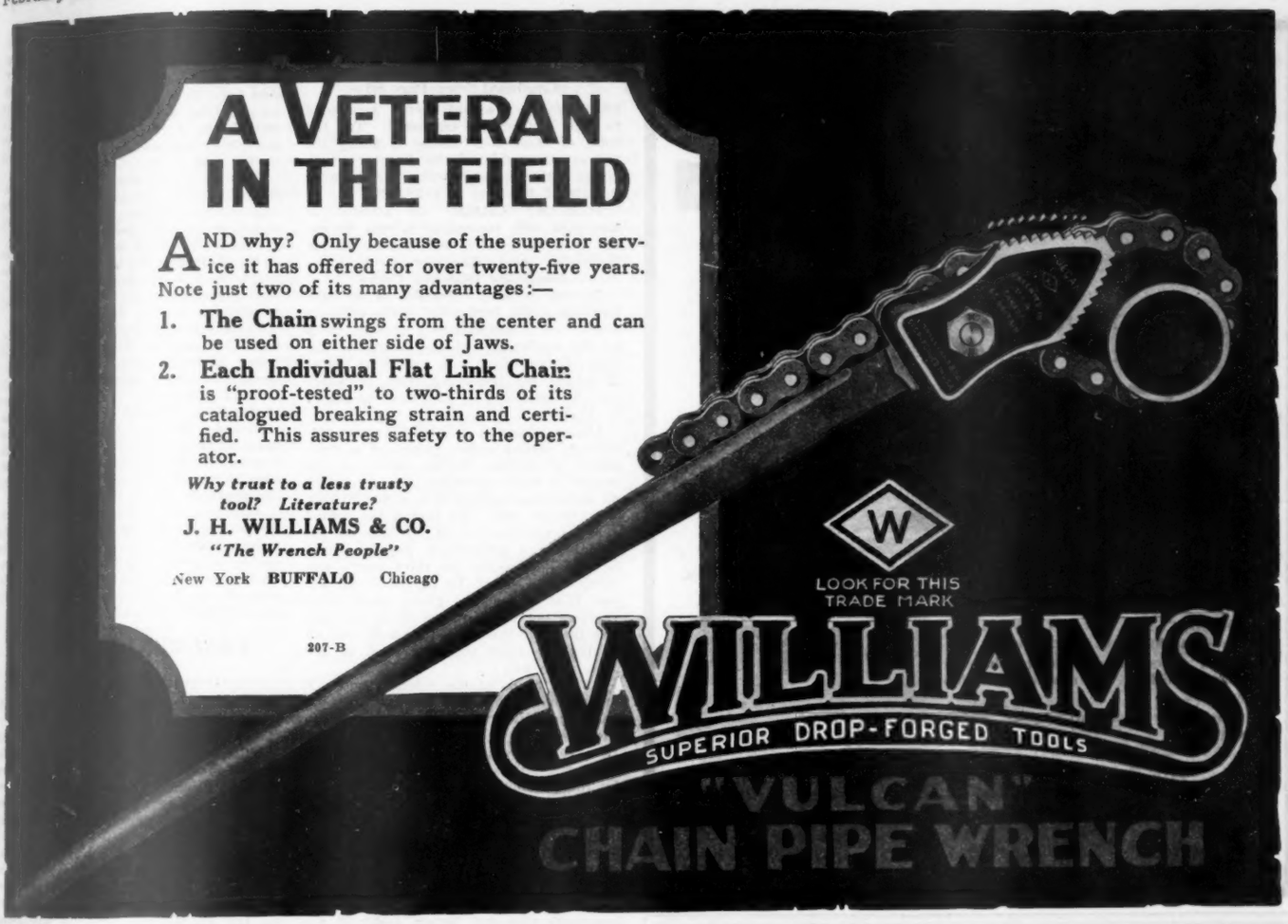
Why trust to a less trusty tool? Literature?

J. H. WILLIAMS & CO.

"The Wrench People"

New York **BUFFALO** Chicago

207-B



LOOK FOR THIS TRADE MARK

WILLIAMS

SUPERIOR DROP-FORGED TOOLS

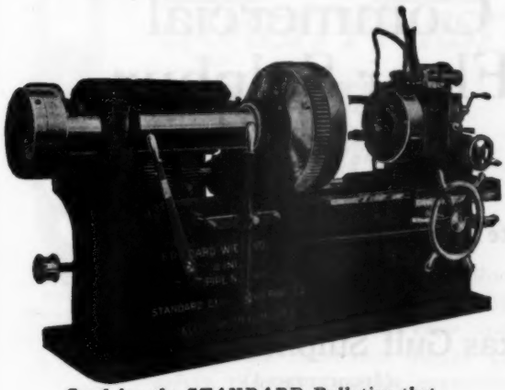
"VULCAN" CHAIN PIPE WRENCH

Standard

"Quality performance"—the ambition of every manufacturer, whether of tin whistles or of automobiles! But many things are necessary to produce "Quality performance." To name but two—skillful and intelligent construction, and, practical and experienced knowledge of all requirements.

Every factor that makes for "Quality performance" is found in the STANDARD Pipe Threader.

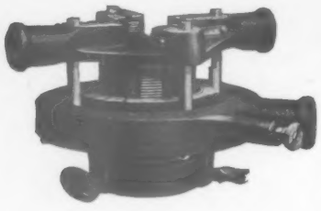
PIPE CUTTERS *and* THREADERS



Send for the STANDARD Bulletins that give the details.

STANDARD ENGINEERING CO.

ELLWOOD CITY — **PENNA.**



"TOLEDO" NO. 1A
1" to 2" Ratchet Threader

$12.00 Net

(STATES WEST OF THE ROCKIES NET PRICE .....$12.75)

It is the outstanding value in pipe threading tools today.

The same incomparable genuine "TOLEDO" No. 1A 1" to 2" ratchet threader at this new reduced price.

Never before could you purchase a threading tool of this character at this low price.

Place your order with your jobber today.

BUY BY COMPARISON AND YOU'LL BUY A "TOLEDO"

THE TOLEDO PIPE THREADING MACHINE CO.
Toledo, Ohio

If You Use

Commercial Flour Sulphur

We can supply you to your advantage
Write us concerning your requirements

Texas Gulf Sulphur Company
(Incorporated)

General Offices
41 East 42 Street, New York

Sulphur Deposit and Plant
Gulf, Matagorda County, Texas

GROUP APPRAISALS OF OIL PROPERTIES

(Continued from Page 86)

plied by the discount factor applicable to the deferment estimated. To the total of these four values is added the net present value of the discovery well, giving a total present value for the area at date of discovery of $178,642.

Deducting $50,000, the amount of leasehold cost assignable to this discovery area, $128,640 is obtained as the appreciation due to discovery.

Composite Discount Curve

In this mode of valuation as we have outlined it, the face value of the ultimate production is reduced to a present value by the application of one composite discount factor which was read from Curve 2, details for the compilation of which may be assembled in such form as shown in Figure 2.

Under column A is listed the gross production decline curve values of a composite production decline curve of the properties to be appraised, beginning with an initial year's production of 80,000 bbls. per average well. By taking the second year's production of 18,803 bbls. as the initial year's production, another curve is had, likewise for the third year's production, etc., until 12 curves in all are had from the values given, each curve representing a well whose life is one year less than the last preceding well, and all having the same economic limit of 100 bbls. per year.

At the heads of the columns under B are given the compound discount factors, based on a 10 per cent rate, applicable to each year of production, assuming that the average return is at the middle of the year. These factors are multiplied by the production values under A, each line under B representing one of the 12 successive curves, explained above, discounted to present value. These lines discounted total ultimate production are totaled under C, while similar unvalues are shown under D. Dividing the values under C by those under D the composite discount factors under E are obtained. Subtracting these factors in turn from unity gives the rates of discount shown in column F. Plotting these discount rates against the corresponding ultimate gross production values and connecting the points by a smooth curve, interpolational values may be read for wells of any size within the range of values given.

Curve 2 was constructed in this manner, the rates of discount being expressed as a per cent instead of a decimal fraction.

Figure 2 also furnishes the data for Curve 1, which is a graphic comparison of the values under A and D.

Conclusion

It will readily be seen that by this method of group appraisals, much of the laborious detail of multiplication is eliminated from analytical appraisals, provided that the number of appraisals to be made on properties having the same production decline curve is great enough to warrant the construction of a composite discount curve, rather than treating each appraisal separately.

If the number of appraisals is small, the usual methods of analytical appraisal are to be preferred.

Values obtained by either the group or individual method should be theoretically the same, but on comparison slight differences will be found, their size depending upon accuracy of constructing and reading the curves used. Such differences, however, are usually so small as to be negligible in comparison to the total value of the property appraised.

FAITH IS RETAINED IN SWEETGRASS ARCH

(Continued from Page 88)

In order to validate their holdings, this work must be done this year. The numerous independent companies have extensive drilling campaigns under way, and there will undoubtedly be from 100 to 200 wells drilled during the year.

It is difficult for the person not conversant with this field to see the real possibilities of the Shelby territory. When it is realized that there is no 40-acre tract in what is now considered the proven area, which has been completely drilled up, it can be readily seen that there is an enormous potential production in this area alone.

This, of course, does not take into consideration the development which will be done in the additional 280 square miles, which so far has been only prospected.

Practically all of the larger companies of the United States are keeping in close touch with developments in this field, realizing the potentialities of low priced acreage and shallow drilling.

Shelby, county seat of Toole County, with its location as the railroad and motor highway center, as well as its modern facilities, including electricity and natural gas, is the logical headquarters of the field. Several companies have established district headquarters here. Many of the larger oil well supply houses, located in Shelby, Kevin and Sunburst, also carry all necessary equipment for the operator.

Montana, with its many likely, unproven structures, in the opinion of the writer, bids fair to become one of the major oil producing States, several producing fields having already been discovered, the total production of which is over 2,000,000 bbls. of oil annually.

EAST CENTRAL TEXAS

(Continued from Page 48)

Producing Co. and Penn will test the Asher farm on the Joardon survey, in the Bazette area and have a rig building.

Elliott & Nichols have a derrick up for a test on the Berry farm, Horn survey, Navarro County. Rowan and others have spudded in a test on the T. Welch farm on the Valera survey. These are all wildcats.

In the Currie area, in Navarro County, tests have been started by Robert Penn and others on the J. White farm, Boren survey and B. E. Stratman and others on the E. Bounds farm on the Boren survey. The Pure Oil Co. is down below 3,028 feet in No. 5 English, Boren survey.

Confidence in Bazette

If the Bazette area does not develop a big oil field, Col. A. E. Humphreys, president of the Humphreys Boyd Oil Co. will be a greatly surprised man. In none of the wildcat exploration work he has done in the past eight years has he had the confidence that he reposes in the Bazette structure, near Kerens, Navarro County. Colonel Humphreys does not say that his company will open the field, but because of the general play the structure will get in the immediate future he is convinced that some one of the wells, at least, will hit the spot that will start another rush so characteristic of the fields along the Mexia fault. The Humphreys Boyd Oil Co. has made plans for quick development of its big block of Bazette acreage if oil is discovered. Colonel Humphreys says the company has enough rotary outfits under contract scattered around Texas, and which would be rushed to Bazette at once if conditions warrant it, to serve his needs. It is expected that by the middle of April the world will know whether Bazette is a flop or an oil region. If it is the latter the favorable crude market will cause a development such as Wortham has had. In the Wortham Field an average of four oil wells a day have been completed since the middle of December and 223 oil wells finished since the first well came in just before Thanksgiving Day. In fields of the same depth in Oklahoma, in the same length of time, operators would have just completed the offsets to the discovery well and it would take another couple of months before the big production began to develop. In Bazette if a field is developed which promises the production of Mexia, Powell or Wortham, the peak might be reached by the middle of June or before. Bazette is the most interesting wildcat area in the United States at this time, and will continue to be until the truth about it is known.

MEXICAN FIELDS

(Continued from Page 44)

146 and 147 are in gray lime at 1,860 and 1,600 feet respectively; No. 148 is rigging; No. 149 is in shells at 1,150 feet; No. 150 cemented 8-inch casing at 1,202 feet in the San Felipe; No. 151 is in shale at 150 feet; No. 152 cemented 8-inch casing in the San Felipe at 1,195 feet; No. 153 is doing the same at 1,200 feet; No. 156 is in gray shale at 307 feet, and in Lot 3 No. 118 cemented 8-inch casing in the San Felipe at 1,142 feet. Four more derricks are up on location in Lot 5. Mexican Sinclair Petroleum Corp.'s No. 85, Lot 2, cemented 8-inch casing in the San Felipe at 1,162 feet; No. 107, Lot 3, is in shale at 350 feet. Transcontinental Petroleum Co.'s operations in Lot 4 follow: Nos. 131 and 138 are running 10-inch casing to cement in the San Felipe at 1,250 and 1,255 feet respectively; No. 145 is drilling in the San Felipe at 1,680 feet, with much gas in evidence: No. 150 is in shale at 650 feet; No. 152 is preparing to cement 10-inch casing at 1,250 feet; No. 157 is in hard shale at 1,050 feet; No. 159 is in lime at 2,075 feet; No. 164 is in shale at 600 feet; and in Lot 5 No. 136 is in lime at 2,360 feet; No. 161 cemented 10-inch casing at 1,215 feet, with the hole full; No. 173 is in shale at 1,000 feet; and, in Lot 2, No. 147 is in lime at 2,065 feet, having had a small pocket of salt water at 2,040 feet. In the Paciencia, just north of Cacalilao, which Transcontinental drills for joint account with Penn Mex Fuel Co., No. 8 cemented 12½-inch casing in shale at 800 feet, Nos. 10, 11 and 12 are cemented or preparing to cement 10-inch casing at 1,200 feet, respectively.

Panuco

In the older sectors of the Panuco Field operations follow: Credito Petrolero's No. 7, Lot 13 Lomas y Llanos, is drilling in the San Felipe shales at 1,730 feet; No. 4, Lot 15, is in white lime at 2,245 feet. La Corona Petroleum Co.'s No. 52 Salvasuchi cemented 8-inch casing in gray lime at 1,235 feet, and No. 94 Ojital is in shale at 990 feet. East Coast Oil Co.'s No. 25 Laguna de la Milpa cemented 8-inch casing in gray lime at 1,231 feet, and No. 438 Ingenio is drilling in gray lime at 1,280 feet. English Oil Co.'s No. 10 Rufino has spudded. Gilliam and others' No. 1, Lot 15 Lomas y Llanos, is drilling in limestone around 2,285 feet. Mexican Sinclair Petroleum Corp.'s No. 6 Tananturo is drilling in hard gray lime at 1,525 feet, and No. 8 is spudding. In Camolote, its No. 4, Lot 6, cemented 8-inch casing in gray lime at 1,695 feet. Mexican Crude Oil Co.'s No. 4, Lot 15 Lomas y Llanos, is drilling in the San Felipe at 2,000 feet, with the hole full of oil. National Lines, Federal zone, No. 20 Panuco district, is in gray lime at around 1,880 feet, with a showing. Schlaet F Co.'s No. 3 Vega de Otate is in gray lime around 1,825 feet. The Texas Co.'s No. 6, Lot 17 Isleta, cemented 8-inch casing in shale and shell at 1,490 feet; and No. 19, Lot 16 Lomas y Llanos, is resuming from 1,599 feet, where 8-inch casing was cemented in the San Felipe.

South Fields

In the south fields, Huasteca Petroleum Co.'s (Mexican Petroleum) No. 54-A Cerro Azul is in gray lime at 1,733 feet; No. 55 is in gray shale at 865 feet; No. 56 is in the same formation at 580 feet; No. 58 is in blue shale at 135 feet; No. 34 Tierra Blanca is in stinking gray shale at 2,197 feet; No. 36 is in brown shale at 1,470 feet; No. 44 is in brown shale at 200 feet. Over to the east in Chapapote Nunez, No. 8 is in gray shale at 1,878 feet. Up in Tres Hermanos, No. 7 is in brown shale at 2,480 feet. In Granadilla, its No. 1 is in shale at 2,743 feet. Mexican Eagle Oil Co.'s No. 24, Lot 132 Amatlan, the deep test, is in brown lime at 4,432 feet; No. 27, Lot 198, is in gumbo and shale at 1,840 feet; No. 44, Lot 125, is in shale at 1,650 feet; No. 42, Lot 131 Chinampa, tested 8-inch casing cemented in hard gumbo at 1,725 feet, and is ready to resume; No. 6, Lot 161 Chinampa, cemented 10-inch casing in shale at 975 feet. Agwi Companies' No. 26 Laguna de Tamiahua is in blue shale at 1,110 feet; Cortez Oil Corp.'s No. 8 Aguada is running 6-inch casing in hard gray shale at 4,360 feet, and No. 11 there is in a sandy gray shale at 2,870 feet. Hudson and others' No. 1, Lot 5 Metlaltoyuca, south of the Tuxpam River, have lost a hole at nearly 700 feet and are skidding over. International Petroleum Co.'s No. 1 Santa Amalia, also south of the Tuxpam River, is a deep hole at 3,293 feet in the gray shale. Norris and others' No. 1, Lot 161 Amatlan, is drilling in gray lime at 2,225 feet. Penn Mex Fuel Co.'s No. 13-A Jardin is reported to have set 10-inch casing about 2,195, presumably in a hard gray shale.

Corcovado

In the Corcovado sector of the northern fields the week-end saw the active field operations as follows: Agwi Companies' No. 2, Lot G, is in gray and green lime at 1,585 feet. Cosmos Oil Co.'s No. 1, Lot D, is in gray shale at 1,300 feet, with five derricks going up in Lot G, which is a Cosmos lease. La Corona Petroleum Co.'s No. 2, Lot 6, is in the San Felipe at 2,303 feet. Corcovado Petroleum Co.'s No. 3, Lot 6, has had a gas blowout in the San Felipe at 2,150 feet, and No. 5, same lot, is in the same formation at 2,100 feet. International Petroleum Co.'s No. 5, Lot 6, is in the San Felipe limes at 2,250 feet. Internex Oil Co.'s No. 2, Lot 4-C, is in the San Felipe at 2,035 fet. Mexican Gulf Oil Co.'s operations in Lot 4 follow: Nos. 5 and 7 are both in white lime at 2,481 and 2,315 feet respectively; No. 14 is cementing 10-inch casing in gray lime at 1,522 feet; No. 18 is drilling in gray lime at 1,200 feet; No. 19 is in a shell at 980 feet, and No. 20 is rigging. Power and others' No. 5 Garruche was shut down for fuel at 1,940 feet (S.F.) at the last report. The status of the other tests in the sector remains unchanged since the last report.

Miscellaneous Northern Fields

At Ebano, Mexican Petroleum Co.'s No. 39 La Dicha is drilling in lime at 1,968 feet; No. 49 is a deep test in the Tamasopa at 2,348 feet; No. 52 is in lime at 2,140 feet; No. 54 is in shale at 640 feet. In its Chapacao sector, Mexican Petroleum's operations are: No. 9 is 2,040 feet in shale and shell; No. 14 is rigging; No. 16 is in gray lime at 2,120 feet; No. 17 cemented 10-inch casing at 1,225 feet; No. 18 cemented 8-inch casing in lime shell at 1,240 feet; No. 19 is in shale at 400 feet.

In the Marland Field, Cia. Petroleum Franco Espanola's No. 21 Limon is in blue and green lime at 2,203 feet; No. 22 cemented 8-inch casing at 1,200 feet, and it is preparing to drill locations Nos. 23 and 24.

In the Topila district, East Coast Oil Co.'s No. 506-A, Lot 29 Tamboyoche, is drilling in white lime at 2,514 feet. Cortez Oil Corp.'s No. 1, Lot 8 Cahuayotes, is drilling in white lime and chert at 3,126 feet.

In the El Barco district, Mexican Gulf Oil Co.'s No. 51 is in gray lime at 1,751 feet; No. 64 is in brown lime at 1,664 feet; No. 65 cemented 8-inch casing in gray lime at 1,325 feet, and No. 67 is rigging. Kern Mex Oil Fields' No. 9 El Barco is drilling around 1,400 feet in gray lime; and No. 13 La Palma is in gray lime around 1,600 feet.

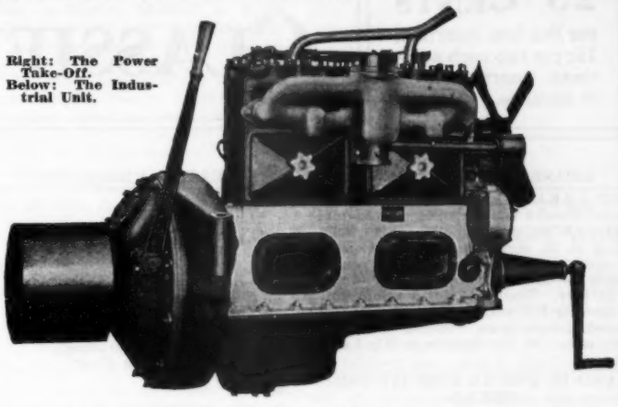
Up in its Chapacao right-of-way, National Lines' No. 6 is in shale at 440 feet; No. 7, which is showing some oil by heads, is in gray lime at 2,005 feet, and No. 9 is in the same formation at 2,060 feet.

At Casa Piedra, just north of Tampico, Modelo Vincent's No. 1 is drilling in blue shale around 700 feet.

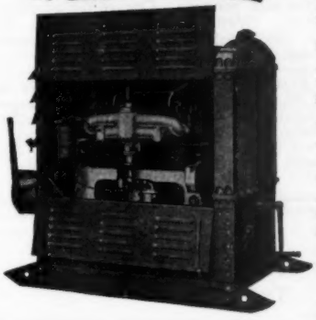
At Los Esteros, American International Fuel Co.'s No. 16 is in hard white lime at 1,920 feet.

At El Naranjo, northwest of Ebano, International Petroleum Co.'s No. 1 is drilling in the San Felipe at 2,554 feet. This test looks hopeless and the company plans to stop the drill at 2,600 feet, unless something develops in the next 46 feet to go.

EQUIPPED WITH RICARDO CYLINDER HEAD



Right: The Power Take-Off.
Below: The Industrial Unit.



Waukesha
TRADE MARK

The greater performance they are capable of giving, the lowered operating costs they can so easily reach, are denied you, now, in your pumps and drilling machinery, perhaps only because you may not know the practical advantages of powering them with the WAUKESHA INDUSTRIAL UNIT. Engines can now be furnished ranging in power from 18 to 100. Write for complete information—*today*.

Waukesha Motor Company
Engine Builders
Waukesha, Wis. New York City

D B

D+B
QUALITY-FIRST
SAFETY
sucker-rod
HOOK

OPEN
Position of hook when open, ready to receive elevator.

The "D & B" Safety Sucker Rod Hook enables faster work with less effort on the part of the crew, and insures the maximum degree of safety through positive operation and ample strength for all loads.

LOCKED
In closed position—hook can only be opened by releasing trigger when relieved of weight of elevator and rods.

D & B Pump & Supply Co.
301 West Avenue 26, Los Angeles, California
Branch: Love Aviation Field, P. O. Box 1033, Dallas, Texas
Sales Representatives at
Casper, Wyoming Houston, Texas Tulsa, Okla. Wichita Falls, Texas
1220

D B

25 CENTS per line first insertion; 15c per line each additional insertion. Cash in advance.

CLASSIFIED WANTS

MAIL your advertisement now. It will be published next week. Cash with order.

LEASES—PRODUCTION

BIG LAKE FIELD, Reagan County, Texas. Twelve square miles proven territory. Will soon double. Six wells drilling S. E. structure between Cosden and producing area. 80 acres in center triangle formed by three drilling wells, $25 an acre. Need cash for development. Oil showing SE will jump prices several hundred dollars acre. Write, small accurate map. W. R. Apperman, Big Lake, Texas.

LAND IN FEE IN NORTHWEST TEXAS

Fee, 1,100 acres Southwest Archer County. Several hundred acres in cultivation, a well will be drilled on this place in spring; price $40 per acre.

Fee, 640 acres 4 miles of Wichita Falls, had a small well on it; ideal place; bargain $45,000.00 cash.

Fee, 3,000 acres Southeast part Archer County, extraordinary price of $22.50 per acre.

STEHLIK & BABER
Kemp Hotel
Box 467 Wichita Falls, Texas

NEW MEXICO LEASES

Owner of 20,000 acres scattered in very desirable counties will assign one-half of acreage for payment of rentals on the other half. Rental date March 28, and rate is 16 cents per acre. Here is a safe place to make money. Box A-610, The Oil and Gas Journal, Tulsa, Okla.

SURE SHOT drilling contracts; 340 acres, Section 13 and 40 acres in 20 and 21, Block Y, Hutchinson County, Texas, 1 mile from several big producers.
R. P. O'GRADY
Old Postoffice Bldg.
Amarillo, Tex.

LEASES and drilling contracts proven and semiproven; 40 to 10,000 acres; Hutchinson and Carson Counties, Texas. Quick action necessary.
R. P. O'GRADY
Old Postoffice Bldg.,
Amarillo, Tex.

PROVEN GAS LANDS

I will give half interest in 2,000-acre lease proven for 60,000,000 feet of gas to party furnishing money to drill first well, develop lease with production. 16-inch gas line runs through field. Ready sale for gas. B. C. Williford, Carthage, Tex.

DRILLING CONTRACT or lease to let on NE ¼ Section 2, Township 19, Range 6 East. Address G. McCoy, 711 North Xanthus, Tulsa, Okla. Phone 3-7982.

FOR SALE—Two wells on pump, production 25 bbls., 725 feet to sand. Room for more wells. Storage for 500 bbls. 18 gravity oil containing 65 per cent lube distillate, now bringing $1.45 at well. Prospects for deeper sand. 15 acres, pipe line, derrick over each well. L. T. Stephenson, 613 Nat'l Bank Commerce, San Antonio, Tex.

ROYALTY—Cowley County, Kansas. Will sell one-sixteenth interest in SE ¼ of SE ¼ 36-32-4, on the Winfield Anticline. 519 E. Lincoln, Iola, Kans.

FOR OIL LEASES and royalties in Seminole and Pottawatomie Counties, Oklahoma, call, write or wire, I. H. Townsend, Konowa, Oklahoma.

SAN JUAN BASIN, New Mexico, 2,500 acres in this high gravity shallow well field, for sale or lease. Edward C. Hall, P. O. Box 37, Sugar Land, Tex.

I AM READY for some drilling corporation to take hold of this oil field.

For the past forty years oil has been seeping into more than a dozen water wells in Franklin County, Ga. For the past three years more than a thousand gallons have been gathered off of the water as it is drawn from the wells.

I now have 30,000 acres leased and ready to offer a drilling company a fine opportunity. Write for particulars. E. G. Morrison, Shelby, N. C.

LEASES—PRODUCTION

J. F. MARION COMPANY
Magnolia Building
Dallas, Texas
Buys and Sells
Texas Royalties
"Ask Us First"

NORTH TEXAS

Shallow field leases, including offsets, at low prices. Offsets to producing leases in Archer County have sold as high as $900 cash per acre. Chance for excellent profits. Write for maps and prices. P. R. MacIntosh, 215 Neil P. Anderson Bldg., Fort Worth. Tex.

FOR LEASE—The NE ¼ of NW ¼ of 16-14n-11e, Okmulgee County, 40 acres proven. Also 400 acres in 26-13n-25e, Sequoyah County, Okla., exceptionally good prospect. Make offer to C. P. Repetto, 7237 High St., Maplewood, Mo.

LEASES—PRODUCTION

FOR SALE—3,200 acres in Owensboro (Kentucky) Field; approved form lease; straight ⅛ royalty, 25 cent rental; three producing sands. Write or wire T. C. Morgan, Room 1305, 27 William Street, New York City, N. Y.

FOR SALE or development, close in to production, leases Russell County, Kansas Pool; royalties close in Cromwell Pool, Oklahoma. Address Ben Gurley, Salina, Kans.

EXCEPTIONAL OPPORTUNITY

Account owner's serious injury he is compelled to sell one-sixteenth interest in well now drilling at seventeen hundred feet and with two good showings already, and six hundred forty acres leased close by. Location on excellent structure, and map furnished on request. Well in Ellis County, Kansas. Also have fine drilling blocks on wonderful structures. Write or wire W. J. Madden, Hays, Kans.

FOR SALE—10,000-acre lease in Allen and Monroe Counties, near Sulphur Creek, some in Clay County, Tennessee; ⅛ royalty, cheap rental, due in 1-2 years; shallow drilling; price 25c to 75c per acre. William S. Silvers, Marion, Ind.

LEASES—PRODUCTION

LEASES and royalties in Ouachita County, Arkansas, from $5 per acre up. P. B. Orr, P. O. Box 303, Camden, Ark.

GARFIELD COUNTY, OKLAHOMA
Leases, Drilling Contracts
P. O. Box 156
Enid, Okla.

BUY OR SELL—Producing royalties. Wortham, Powell, Mexia and Cooke County, Texas. Have lease for sale Humphreys' first location Bazette-Keremo District, also royalties. Want production. Have royalty near Marland-Rycade test in Hunt County, Texas. Cooper, 1609 W. Page St., Dallas, Texas.

FOR SALE—Leases and drilling blocks Greenwood County, Kansas. Write me your wants. A. E. Griffith, Box 401, Eureka, Kansas.

INVEST TODAY in Pomona, the new Townsite on the Missouri Pacific R. R., surrounded by drilling oil wells; two wells to be drilled on townsite; a lot or acre tract with oil and gas rights (fee simple) may make you a fortune. You get a warranty deed and when oil or gas is hot you can lease your land at a big price. Fortunes were made in dozens of towns when oil was hit. Write for map and information. Business lots $150.00; acre tracts 200x220, price $200.00. This is real estate and you own the land. Write for map.
POMONA TOWNSITE COMPANY
Monticello, Ark.

January 21

The Oil and Gas Journal
Tulsa, Okla.

Gentlemen:

Enclosed please find check for renewal of our advertisement in your Journal.

As to advertising in your Journal, will say, that upon receipt of your first card soliciting our patronage, we decided to insert a $4.50 ad for one month, thinking at the time that we would try it just to be trying, and little realizing the real value of your Journal as an advertising medium, for, to our astonishment and surprise, we received one of the best orders we have ever received, through this small and inexpensive ad.

Hoping to be a continuous advertiser and awaiting the issue of the Annual Review, we are,

Yours very truly,
D. WOLFF & SONS,
A. Wolff (Signed)

AW:MR

LOGAN COUNTY is getting good play by big companies. Get in ahead of production. Oil leases and royalties priced cheap. Box 366, Guthrie, Okla.

ROYALTY—Creek County; $2,000 buys ½ of 60 acre adjoining production in Stroud Field. Box 366, Guthrie, Okla.

PRODUCTION—10 bbls.; shallow; near railroad station; map. H. D. Ahrens, Paola, Kans.

SOUTHEAST NEW MEXICO

Can furnish practically proven leases in Artesia Field, Eddy County. Also other tracts in Eddy, Chaves and Lea Counties. Particulars on request.
H. T. ORCUTT
816 Colcord Bldg. Oklahoma City, Okla.

FOR SALE—323-acre lease Hamilton Dome, Moffat County, Colorado near discovery well. Box 1905, Los Angeles, Calif.

FOR SALE—At bargain prices, oil and gas leases, production and royalties in the Kentucky shallow fields. For full particulars and maps, address W. P. Harley, Bowling Green, Ky.

LIBERTY COUNTY, TEXAS—Hull Oil Field, acreage for lease in southwest part of Field, one-half mile from production. Owner, Box 27, South Orange, New Jersey.

METCALF COUNTY oil leases, vicinity production; from 50 cents to $5 per acre, which pays rental for one year. Will advance in value as drilling goes on. Box 184, Edmonton, Ky.

ROYALTY
"Buy from the owner"

Owner will sell one-half perpetual royalty on lands located in active territory, between two drilling wells. Twenty acres or more price $2.50 per acre. Terms if desired. Address "Owner," P. O. Box 1036, Fort Worth, Texas.

OIL LEASE—827 acres, five-year 88 form Live Oak County, Texas. Close to production. Drilling on three sides on structure. Price for quick sale $5.00 per acre. For map and full particulars address Gulf Leasing Co., 525 Brady Bldg., San Antonio, Tex.

LEASES—PRODUCTION

OIL AND GAS LEASES
On Marathon Fold

18,000 acres, University permits, dated October 1, 1924, joining University permits of Sun Oil Co. and Gulf Production Co. Transcontinental now drilling and three more wells to start. Price reasonable.

20,000 acres 10-year leases, Crockett County; large and small blocks adjoining best companies.

5,000 acres, 10-year leases; close to drilling wells; Upton County.

1,920 acres University permits, Reagan County; close to Big Lake Oil Co., and Texon Oil & Land Co. producing wells. Want drilling contract.

133,000 acres Pecos County, near blocks of Arkansas Fuel and Pittsburgh operators. Low in price. Will sell in blocks or arrange for wells. Will allow time for geological inspection.

3,000 acres 10-year lease. Upton County; near drilling well and joining leading company holdings. Prices and maps on request.

C. W. WEBSTER
17th Floor W. T. Waggoner Bldg.
Fort Worth, Texas
Reference: R. G. Dun & Co.

40 ACRES of land. $125. Good title. Franklin County, Arkansas. J. Schoenborn, 2421 High St., Chicago, Ill.

FOR SALE or development on working interest, lease close to production, Union County, Arkansas. Semi-proven. Ben Gurley, Salina, Kans.

$25,000 OIL WELL BONUS SUGGESTED

KINGFISHER, Feb. 2.—(Special)—Kingfisher business men want more oil prospecting in Kingfisher County. F. I. Boynton, Kingfisher lawyer, has agreed to subscribe $1,000 to a $25,000 bonus to be paid to the company bringing in the first commercially productive oil or gas well within fifteen miles of Kingfisher. (Newspaper clipping).

E. F. Freeman has an attractive block of leases in township 17-8, about 7 miles northwest of Kingfisher, on which he wishes to secure a drilling contract with a reliable firm. For particulars address E. F. Freeman, Box 823, Enid, Okla.

ROCKY MOUNTAIN AREA

(Continued from Page 42)

kets. That they were able to go on and complete the trip speaks well for their fortitude and ability.

New Sand In Sunburst

Sunburst oil men are somewhat excited over a new sand found in the Queen City Oil Co.'s well on Section 4-32-2 in the south end of the field. This is the section that has had a number of gushers drilled on it in the past year and the Queen City's well was drilling to the Ellis sand expected about 1,475 feet, when a stray sand that showed considerable oil was struck at 1,375 feet. The hole filled up about 1,300 feet but the well did not make a flow. There was about 200 feet of cavings at the bottom and the well is considered a commercial producer.

The Sunburst Field has been producing from two horizons. The upper, known as the Kootenai sand, is really the Dakota sand of the Rocky Mountain region and is a formation in the Cretaceous age, its average depth at Sunburst being around 1,200 feet. The second and main producing horizon is the Ellis sand with an average depth about 1,500 feet and this is the Sundance sand of the Rocky Mountain region, sometimes called the Twin Creek and Nugget sand. The Kootenai sand produces the higher grade of crude, but the Sundance sand, or Ellis, produces the greater quantity in the Sunburst Field. The Ellis is Jurassic.

The new sand found in the Queen City well is considered a stray and probably belongs to the Sundance formation. Its extent over a producing area is wholly a matter of conjecture at present.

Cat Creek Field

In the Cat Creek Field in Petroleum County, the operators have about given up hope of any further extension westward and are now turning to the east side of the field. The Mitchell well on Section 21-15-30 is to be drilled as a deep test in that part of the field. The new shallow oil strike on McDonald Creek is drilling into the sand after trying to shut off the water. The attempt failed and they are drilling in wet.

The Transcontinental Oil Co. is becoming active in the LaBarge and Big Piney district in the southwest corner of Wyoming. The Midwest is drilling a wildcat there and the Transcontinental is building camp and moving in material for a test.

Salt Creek Completions

Nine new wells were completed by the Midwest Refining Co. in the Salt Creek Field during the past week. The Wyoming Oil Field Co. completed a 50-bbl. producer on Section 26-40-79, in the first Wall Creek sand at 1,460 feet, and another producer good for 257 bbls. on Section 24-40-79, at 1,904 feet.

The Wyoming Associated Oil Co. found a well good for 89 bbls. on Section 14-40-79, at 1,820 feet and one good for 125 bbls. on Section 26-40-79 at 1,440 feet. The Wyoming Associated also completed a producer good for 100 bbls. on Section 26-40-79 at 1,455 feet.

The Wyoming Associated Oil Co. completed a well on Section 25-40-79 that started off at 400 bbls. from 1,896 feet. This well is drilled on land owned jointly by the Midwest Oil Co. and the Wyoming Associated.

The Midwest Oil Co. found a producer good for 50 bbls. on Section 26-40-79, at 1,480 feet.

The Salt Creek Consolidated Oil Co. completed a produced good for 66 bbls. at 1,874 feet on Section 34-40-79 and another producer good for 71 bbls. on Section 31-40-78 in the second Wall Creek sand at 2,133 feet.

Gasser in Utah

In Utah, the Utah Oil & Refining Co., drilling on the Cisco structure, reached what is considered the Frontier sand at 1,950 feet and found a gasser estimated at 5,000,000 feet. The well is the second to be drilled on this structure and is on Section 30-20-22 in Grand County. The Utah Oil & Refining Co. is a subsidiary of the Midwest.

In New Mexico, the Bloomfield Oil & Gas Co. has opened what appears to be a new field about 12 miles east of Farmington, San Juan County, with a producer estimated at 60 bbls., the crude being the same high gravity oil that is found in Hogback. The depth of the sand is 722 feet and the well, which is the third test of that company at that point, is on Section 15-29-11 and this area is not on the Navajo Indian Reservation, but on private lands coming down from the old Spanish grants.

Weekly Field Runs

Salt Creek	60,180
Teapot	2,050
Big Muddy	3,270
Grass Creek	2,100
Elk Basin	830
Greybull	20
Rock River	3,000
Rex Lake	180
Lance Creek	770
Poison Spider	130
Osage	350
Lander	200
Byron	60
Pilot Butte	30
Lost Soldier	4,940
Ferris	110
Cat Creek	3,300
Sunburst	3,750
Craig	860
Fort Collins	750
Florence	250
Hogback	340
Artesia	1,000
Rattlesnake	250
Miscellaneous	275
Total	88,995

MUST PLUG OLD WELLS, SAYS SECRETARY WORK

WASHINGTON, D. C., Feb. 14.—The Secretary of the Interior announces that operators holding leases on public lands will be compelled in the future to protect and plug securely old and unused oil and gas wells on the tracts to which they hold rights. The decision was made as a result of the failure of lessees who secured their leases through assignment on tracts already developed, to repair and plug up old wells claiming that this responsibility rested on the former holders of the leases.

Calling attention to the terms of Government oil and gas leases and assignments providing for due regard for the prevention of waste oil and gas developed, including the entrance of water through wells drilled to the oil bearing sands to the destruction or injury of the oil deposits, the Secretary pointed out that the preservation and conservation of the property for future production operations was mandatory. He also cited that the health and safety of workmen and employes were at stake. The terms of the lease and assignments also provide for the plugging securely of wells before they are abandoned as to effectively shut off all water from the oil and gas bearing strata.

In order to enforce the repairing and plugging of abandoned wells on public lands, it is the plan of the Department to call defaults to the attention of the lessee's bondsmen.

CLASSIFIED WANTS

LETTERHEADS—PRINTING

CONSUMERS' LEDGERS

We are prepared to furnish from stock standard forms of Gas Meter Consumers Ledgers. Sample forms and quotations on request. First class material and workmanship.

DERRICK PUBLISHING CO.
Oil City, Pa.

MULTIGRAPHING

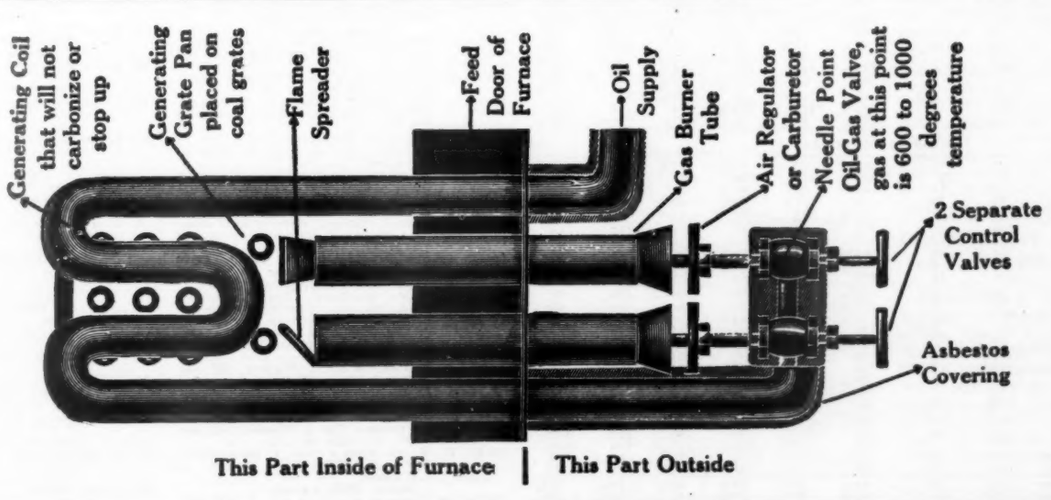
"REAL MULTIGRAPHING"
Every job is the job with us. Direct Mail Advertising Specialists—Multigraphing, Mimeographing, Mailing Lists. Complete Mail Campaigns from you to your prospect's desk.

THE PUBLIC LETTER SHOP
Pan-American Bldg. Tulsa, Okla.

PATENTS

PATENT your oil and gas well apparatus improvements. Write for free booklet and advice. References gladly furnished. Milo B. Stevens & Co., 650 F. St., Washington, D. C. Established 1864

USE OIL ← "PATENTED JARVIES OIL-GAS BURNER" → SAVE TOIL


Generating Coil that will not carbonize or stop up
Generating Grate Pan placed on coal grates
Flame Spreader
Feed Door of Furnace
Oil Supply
Gas Burner Tube
Air Regulator or Carburetor
Needle Point Oil-Gas Valve, gas at this point is 600 to 1000 degrees temperature
2 Separate Control Valves
Asbestos Covering
This Part Inside of Furnace
This Part Outside

Purely a gravity proposition—the JARVIES will be as economical with oil at 7 cents as a motor burner with oil at 5 cents a gallon.

Write for Literature --- DO IT NOW

No Smoke—No Noise—No Electricity or Gas required. We manufacture burners for all grades of oil and all sizes of Heating and Power Plants from a stove to 1000 horse power boilers.

Jarvies Gas & Oil Burner Co., Inc.
4022 Belleview Avenue
Kansas City, Missouri

For sale by the Crane Co., Standard Sanitary Mfg. Co., and all companies handling plumbers' supplies.

JARVIES CO., Inc.
4022 Belleview
Kansas City, Mo.

Am interested in your OIL-GAS BURNER. Send Literature

Name.....

Address.....

OIL SECURITIES REACT SLIGHTLY BUT CONTINUED ACTIVE DURING WEEK

By N. O. Fanning

NEW YORK, Feb. 14.—Oil securities reacted slightly during the past week but continued active. Independent Oil & Gas led the independent oils, reaching a new high at 29¾. Indian Refining Co. stock was also strong, breaking through 10.

The New York Transit Co. declared a quarterly dividend of 75 cents per share, against 50 cents per share paid in the last five preceding quarters.

Directors of the Continental Oil Co., which is the new name of the consolidated Continental Oil and Mutual Oil companies, reduced the dividend payments by declaring a quarterly disbursement of 2½ per cent or 25 cents per share on the new $10 par value stock. Previously the company paid 12½ per cent quarterly on the old $5 par value stock.

Standard of New York

In the circular offering Magnolia Petroleum Co. $15,000,000 10-year 4½ per cent notes it is stated that the Standard Oil Co. of New York owns approximately 69 per cent of the stock of the Magnolia company.

Cumberland Pipe Line

The Cumberland Pipe Line Co. reports for the year ended December 31, 1924, net profit of $439,446, equivalent to $14.64 per share earned on $3,000,000 capital stock (par $100), against $786,420, or $26.21 per share in 1923.

The income account for 1924 compares with 1923 as follows:

	1924	1923
Net profits	$439,446	$786,420
Dividends	360,000	300,000
Surplus	$79,446	$486,420
Previous surplus	1,254,958	768,538
Total surplus	$1,334,404	$1,254,958

The balance sheet as of December 31, 1924, compares with 1923 as follows:

Assets

	1924	1923
Plant	$4,626,729	$4,638,577
Other investments	3,885,637	2,227,762
Accounts receivable	165,721	153,478
Cash	63,609	289,599
Total	$7,741,696	$7,309,416

Liabilities

Capital stock	$3,000,000	$3,000,000
Depreciation	2,346,613	2,162,228
Accounts payable	145,716	23,869
Oil purchase and sale contract	914,963	868,361
Surplus	1,334,404	1,254,958
Total	$7,741,696	$7,309,416

Southern Pipe Line

Southern Pipe Line Co. reports profits for the year ended December 31, 1924, profits of $280,092, equivalent to $2.80 per share earned on $10,000,000 capital stock, compared with $547,707, or $5.47 per share in 1923.

The income account for 1924 compares with 1923 as follows:

	1924	1923
Profits	$280,092	$547,707
Dividends	799,999	999,999
Deficit	$519,907	$452,292

Balance sheet as of December 31, 1924, compares as follows:

Assets

	1924	1923
Plant	$5,971,232	$5,970,849
Other investment	7,572,530	7,762,571
Accounts receivable	133,871	206,659
Cash	26,121	110,723
Total	$13,703,754	$14,050,802

Liabilities

Capital stock	$10,000,000	$10,000,000
Depreciation reserve	2,505,897	2,333,088
Accounts payable	951	901
Surplus	1,196,906	1,716,813
Total	$13,703,754	$14,050,802

The Southern Pipe Line Co. declared a quarteriy dividend of $1 per share, payable March 2 to stockholders of record February 14. Previously $2 quarterly was paid.

NEW YORK STOCK EXCHANGE—LIST OF ACTIVE STOCKS

No.	Stock—	Par	$Dividend Rate	Clos. Quotations Feb. 16	Feb. 9	1924 High	1924 Low	1923 High	1923 Low
1.	American Republics	..	..	*60	*60	43	25	..	..
2.	Associated Oil	25	6	36	37½	34⅝	27⅝	29¼	29½
3.	Atlantic Ref. com.	100	..	110	114⅜	140½	78½	160	98⅜
4.	Barnsdall "A"	25	..	25¼	27¼	22¼	14	35	9⅞
5.	California Pet. com.	25	7	26	28½	29	19⅞	28½	17¼
6.	Cosden & Co. com.	..	..	30½	33½	40¼	22⅝	62¼	23⅜
7.	Gen. Am. Tank	..	†3	50	54	53	35½	71⅝	40
8.	General Asphalt	100	..	53¾	58¼	63⅝	31⅝	64	23
9.	General Petroleum	25	8	51¼	50⅜	45	38⅝	..	..
10.	Houston Oil	100	..	77⅜	82½	82½	61	78	40¾
11.	Independent Oil & Gas	$1		25½	26¼	16¼	5⅝	11¼	3⅝
12.	Indian Refining	10	..	8	8½	7	3⅝	8½	4
13.	Louisiana Oil	50	..	19⅜	22	..	..	..	..
14.	Maracaibo	..	..	27½	32	37½	25⅝	28¼	16
15.	Marland	..	..	42	44	42	29	59⅝	18½
16.	Mexican Seaboard	..	..	15¼	16⅜	25⅝	14½	19⅜	5⅜
17.	National Supply	50	6	66	67	72½	54	68	54
18.	Pacific Oil	50	†2	53½	63	58¼	45	52½	31½
19.	Pan American com.	20	16	69	73⅞	65	44½	93½	53
20.	Phillips Petroleum	..	†2	40⅞	43⅜	42¼	28½	69⅝	19⅜
21.	Producers & Refiners	50	..	27⅜	30½	43½	29⅝	58¼	17½
22.	Pure Oil com.	25	6	30⅜	32¼	30½	20	32	16¼
23.	Royal Dutch, N. Y. sh.	13.40	4 42½	54⅜	55½	59½	40⅝	55½	40½
24.	Shell Transport	10	3.30	43⅝	*43	42	33	41¼	29¼
25.	Shell Union com.	..	†1	25⅜	27	22½	15⅜	19¼	12⅜
26.	Simms Petroleum	10	..	21½	22⅝	24	10⅜	16⅜	6½
27.	Sinclair Cons. com.	..	..	21½	22⅝	27½	15	39⅝	16
28.	Skelly Oil	25	..	27½	29¼	29	17¼	35	12¼
29.	Standard of California	25	8	61⅜	69⅜	68½	55½	64½	47½
30.	Standard of N. J. com.	25	4	43⅝	45	42¼	33	44¼	30⅞
31.	Standard of N. J. pfd.	100	7	118¼	*117	118⅝	115⅜	118¼	114⅜
32.	Superior Oil	6	..	5	6¼	8¼	2⅝	6⅜	2
33.	The Texas Co.	25	12	47¼	41½	45⅝	37⅜	52⅜	34⅝
34.	Texas Pac. Coal & Oil	10	..	18⅜	21¼	16¼	8¼	24⅜	5½
35.	Tide Water Oil	100	4	144½	144¼	151	116¼	144	94
36.	Transcontinental	..	..	4½	5	6¼	3¾	14½	1¼
37.	Union Oil of Cal.	25	7.2	40	41½	39	35½	..	..
38.	Union Tank com.	100	5	120½	*120	132⅞	94	114	106
39.	White Eagle Oil & Ref.	..	2½	28⅜	30¼	29⅝	23¼	30¾	20½
	Standard Oil Stocks								
40.	Anglo-American Oil	£1	25	19½	20	18¾	14⅜	19¾	13½
41.	Borne Scrymser	100	12	*231	*230	264	150	153	110
42.	Buckeye Pipe Line	50	14	66	67	85½	51	94	57½
43.	Chesebrough Mfg. Co.	25	14	59	63½	52½	29½	340	205
44.	Crescent Pipe Line	25	..	*14½	*14	20	11¼	25	15
45.	Cumberland P. L.	100	12	136	137	148	109	117	80
46.	Eureka Pipe Line	100	8	*87	*84	105	74	117¼	87
47.	Galena Signal com.	100	4	63½	64	69⅜	52½	78	55
48.	Humble Oil & Ref.	25	4.8	45½	46⅜	43⅜	36	41	28¼
49.	Illinois Pipe Line	100	12	148	146	161	123	171	115
50.	Imperial Oil Ltd.	25	12	122½	126⅛	119	99	123	92
51.	Indiana Pipe Line	50	8	77½	*77	100	66	103	81
52.	International Pet. Co.	100	x50	25⅝	27¼	24⅝	16⅜	24⅝	13¼
53.	Magnolia Pet. Co.	100	4.5	146	154½	162	124	166	123
54.	National Transit	12.50	16	*23½	23⅛	25⅜	20⅝	29	19¼
55.	New York Transit	100	3	73	71	97	54½	138	70
56.	Northern Pipe Line	100	6	*84	*84	107½	72	111	96
57.	Ohio Oil Co.	25	8	71¼	73	79½	53	85⅜	48⅜
58.	Penn-Mex. Fuel	25	..	*40	40	45⅝	27	45	10½
59.	Prairie Oil & Gas	100	8	240	246¼	269	193	272	152
60.	Prairie Pipe Line	100	8	120¼	120	111	100	117	93
61.	Solar Refining Co.	100	15	230	230½	240	170	212	161
62.	South Penn Oil	100	..	179	182½	176	117	196	100
63.	South West Pa. Line	100	4	78	*80	89	68	89	66
64.	Southern Pipe Line	100	4	88	87	100	80¼	116	87
65.	Standard of Indiana	25	10	65½	67⅜	69⅜	54¼	69⅞	48½
66.	Standard of Kansas	25	..	41¼	41½	50½	32½	56¼	36½
67.	Standard of Kentucky	25	16	119	120¾	121⅛	103	109½	76
68.	Standard of Nebraska	100	20	250	260	262	198	280	186
69.	Standard of New York	25	5.6	45⅝	46¼	48	37⅜	49⅜	35½
70.	Standard of Ohio com.	100	10	350	354	377½	277	320	270
71.	Swan & Finch com.	25	..	24½	*24½	28	20	..	..
72.	Vanuum Oil	25	†3.75	89	89¼	83¼	56½	55½	40
73.	Washington Oil	10	..	*30	*30	29	25	28	20¼
	Miscellaneous Stocks								
74.	Cities Service bks. sh.	..	†21	20⅜	21⅛	19	13⅛	18⅛	12⅜
75.	Continental	10	..	25⅝	30	..	..	..	..
76.	Gulf Oil Corp. of Pa.	25	6	66	68¾	67¾	56	68¼	45¾

*Bid, no sales. †In dollars. ‡The figures in this column are kept up to date as far as possible, but are not guaranteed. xCents per share.

The Oil and Gas Journal's weekly average price of 20 representative petroleum stocks listed on the New York Stock Exchange was as follows:

Feb. 16	55.96	Jan. 12	55.28	Dec. 8	49.49
Feb. 9	58.39	Jan. 5	53.01	Dec. 1	49.59
Feb. 2	59.24	Dec. 29	51.73	Nov. 24	50.23
Jan. 26	56.09	Dec. 22	50.76	Nov. 17	50.07
Jan. 19	54.58	Dec. 15	50.36	Nov. 10	51.86

PRESENT NEED FOR OIL AWAKENS WILDCATTER

(Continued from Page 26)

NW cor. SW NE. Drilling at 1,625 feet.

21-19- 1w Ponca Oil & Gas Co.'s No. 1 Bollington, SE cor. Shut down at 3,045 feet.

24-19- 1 Amerada Petroleum Corp.'s No. 1 Ingram, SE cor. Show of gas and oil at 1,230-44 feet; drilling at 3,200 feet.

16-17- 4 Flynn & Morgan's No. 1 Storey, SW cor. NW SE. Drilling at 2,360 feet.

Grady County

31-10- 8w Hawkins & Young's No. 1 Higgins, NW cor. SE NW. Rotary rig up.

Atoka County

1- 1-11 Guy Vaughn's No. 1 Nichols, SW cor NE.

Canadian County

2-13- 8w Wrightsman & Rebold's No. 1 First National Bank of El Reno, SE cor. Shut down at 540 feet.

29-11- 7w The C. & O. Drilling Co.'s No. 1 Saunders, NE cor. Shut down at 150 feet.

1-10- 5e Seawright and others' No. 1, SE cor. NE SE NE. Building rig.

Comanche County

10- 1- 9w A. B. Cook's No. 1 Ray, SE cor. NW. Rigging up rotary.

Custer County

26-15-18w Price & Pringley's No. 1 Hatcher, NE cor. SW. Shut down at 2,807 feet.

1-15-15w Parker Oil & Gas Co.'s No. 1 Rough, NW cor. SE SE NW. Shut down at 3,025 feet.

1-14-14w Guller & Ossenbeck's No. 1 Noone, SE cor. SW. Shut down at 370 feet for funds.

Cherokee County

25-19-21 Adkinson and others' No. 1, SW cor. SE. Shut down in lime at 2,300 feet.

33-19-23 Gay Home Oil Co.'s No. 1, SE cor. Shut down at 1,840 feet.

Lincoln County

20-17- 5 Grimes and others' No. 1 Lindley, NW cor. NE. Fishing at 4,100 feet.

23-16- 6e Day Oil Co.'s No. 1, SE cor. Drilling at 3,600 feet.

17-15- 3 The Texas Co.'s No. 3 Powell, C NW quarter. Shut down at 920 feet.

32-15- 4 Magnolia Petroleum Co.'s No. 1 Dodrill, NE cor. SW. Drilling at 3,850 feet.

27-15- 5 Magnolia Petroleum Co.'s No. 1 Strottenburg, SW cor. SE SW NE. Drilling at 1,825 feet.

15-15- 6 Blankerbert and others' No. 1 Lowell, SE cor. SW. Small show that shooting did not improve at 1,343 feet. Fishing at 3,270 feet.

20-14- 4 J. C. Cook's No. 1 Spencer, SW cor. NW SE. Show of gas at 2,460 feet. Drilling at 2,500.

16-14- 5e Wolf Brothers' No. 1 School land, SE cor. Location made.

14-13- 6 Producers & Refiners Corp.'s No. 1 Heinzig, SW cor. NW SW. Cleaning out; total depth, 2,510 feet.

26-12- 2 E. Costa's No. 1 Walker, SE cor. NW. Drilling at 3,300 feet.

8-12- 5 J. C. Cook's No. 1 Richardson, SW cor. NW SW. Drilling at 3,200 feet.

26-12- 2 E. Costa's No. 1 Walker, SE cor. NW. Drilling at 3,225 feet.

8-12- 5 J. C. Cook's No. 1 Richardson, SW cor. NW SW. Fishing at 2,875 feet.

Roger Mills County

32-16-22w Colorado Oil Co.'s No. 1, NW cor. Shut down at 2,300 feet.

9-16-21w Rozana Petroleum Co.'s No. 1, SW cor. NW NE NE. Shut down for orders at 4,047 feet.

9-16-21w Kellogg and others' No. 1 Seaba, NE cor. Rig up.

15-15-26w Thomas & Fide's No. 1 McClure, SE cor. NW. Shut down at 4,310 feet.

33-13-21w The Texas Oil Development Co.'s No. 1 Fields, NE cor. Rig up.

Blaine County

30-16- 9w Pansy Oil Co.'s No. 1 Burton, NW cor. SW SE NE. Shut down for funds.

Wagoner County

29-17-19 Aggis Kirker's No. 1 Cobb, SW cor. SE. Made 5 bbls. from sand at 312-27 feet. Shut down at 1,250 feet.

Okfuskee County

25-12- 9 C. W. Wangerine's No. 1 Callahan, NW cor. Drilling at 4,100 feet. Had shows of oil at 3,810 and 3,834 feet.

12-11- 7 Amerada Petroleum Corp.'s No. 1 Yarhola, NW cor. NE. Drilling at 3,250 feet.

33-11- 7 Independent Oil & Gas Co.'s No. 1 Nelly Temunthlohpe, SE cor. SW SW. Rig up.

8-10- 9 Berry Petroleum Co.'s No. 1 Tecumseh, NE cor. SW. Fishing for casing at 3,476 feet.

22-10- 9 Fuhrman & Shaffer's No. 1 Samuel, C NW NW NW. 3,000,000 feet of gas at 3,095-3,110 feet. 7,000,000 feet of gas at 3,177-91 feet with spray oil. 25,000,000 feet gas and spray of oil at 3,310 feet. Lost tools.

26-11- 7 C. J. Wrightsman's No. 1 Kidd, SE cor. SW NW. Fishing for casing at 3,618 feet.

Seminole County

31-11- 8 The Berry Petroleum Co.'s No. 1 Lusey, SW cor. NE. Building rig.

10- 8- 7 Ossie Oil Co.'s No. 1 Davis. Good show of oil at 2,635-39 feet. Shut down because of no pipe line connections.

33- 6- 6 Harey & Maxwell's No. 1 Gherty, C NE NW. Drilling at 2,050 feet.

20- 6- 7 C. F. Noble's No. 1 Dindy, C SW SW SE. Show of oil at 1,840-47 feet. Drilling at 3,427 feet.

22- 7- 7 Transcontinental Oil Co.'s No. 1 Davis, NE cor. SW. Drilling at 1,975 feet.

19- 5- 6 Howarth Oil & Gas Co.'s No. 1 Edwards, SE cor. SW NE. Drilling at 3,150 feet.

Hughes County

26- 9- 9 Fuhrman Petroleum Co.'s No. 1 Harjo, SW cor. NW SW. Rig up.

27- 9- 9 Josey Oil Co.'s No. 1 Cox, NW cor. SE. Location made.

8- 6-10 Walton & Snider's No. 1 Maykin, C NE NE NW. Drilling at 1,515 feet. Making 4,000,000 feet gas.

4- 5-11 Skelly Oil Co.'s No. 1 McLaurin, SW cor. SW. 1,000,000 feet gas Bradenheaded at 1,547-1,613 feet. Set 6⅝-inch pipe at 3,200 feet and shut down for funds.

Pottawatomie County

19- 7- 4 Pierce Oil Corp. and McMan's No. 1 Nelinguet, NW cor. Shut down at 200 feet.

Coal County

24- 1- 8e McPherson and others' No. 1 Jefferson, NW NE SW. Shut down at 300 feet.

Pontotoc County

19- 5- 7 Howarth Oil & Gas Co.'s No. 1 Edwards, SE cor. SW NE. 5,000,000 feet of gas at 1,360 feet. Drilling at 3,100 feet.

2- 2- 5 Thompson & Black's No. 1 McSwain, SE cor. Shut down at 1,500 feet, contract depth.

33- 5- 8 Homaokla Oil Co.'s No. 1 Shields, NW cor. SW NE. Drilling at 900 feet.

Pushmataha County

33- 2-19 Anchor Oil Co.'s No. 1 Eachwood, NE cor. SE. Shut down at 1,110 feet.

Texas County

6- 1-17e Beaver Oil Co.'s No. 1 Wood, NE cor. Shut down at 1,850 feet for funds.

Beaver County

8- 1-20e Empire Gas & Fuel Co.'s No. 1, NE cor. SW. Plugging back from 3,537 feet to a sand at 2,850-2,910 feet.

33- 5-28e Gate Valley Oil Co.'s No. 1 Dewey, NE cor. SE. Shut down at 3,300 feet for litigation.

Southern Oklahoma

Cotton County

7- 5- 9w W. E. Norton and others' No. 1 Nipper, SE cor. Rigging up.

Jefferson County

21- 5- 6w Tarkington & Kelsey's No. 1 Major, C NW NW SW. Shut down for 10-inch casing at 725 feet.

34- 5- 6w Barber and others' No. 1 Culbertson, C SE SE SW. Rigged up and shut down.

36- 5- 4w Godley Oil Co.'s No. 1 Woodworth, NE NE NW. Shut down at 565 feet for 12½-inch casing.

Carter County

8- 1- 2w The Tidal Osage Oil Co.'s No. 1 Franklin, NW cor. Drilling at 3,000 feet.

5- 5- 2w Coline Oil Co.'s No. 1 Lewis, C SW SW SE. Show of gas at 1,235-80 feet. Drilling at 2,200 feet.

Johnson County

9- 4- 4e Root and others' No. 1 Trotter, C SE SE NE. Show of oil at 2,035-75 feet. Drilling at 2,200 feet.

Stephens County

11- 3- 9w Ellis Drilling Co.'s No. 1 Gill, C NE SW SW. Location made.

5- 3- 4w Cameron Refining Co.'s No. 1 Trout, SE cor. Drilling at 900 feet.

36- 2- 8w Wells, Pearson & Smith's No. 1 Enloe, SE cor. SE SE SW. Drilling at 2,700 feet.

4- 1- 7w Stella Shepton's No. 1 Vandever, C NW SE NW. Set 6⅝-inch casing at 2,794 feet.

11- 1- 4w Magnolia Petroleum Co.'s No. 1 Womack, SE cor. Drilling at 2,000 feet.

23- 1- 4w Russell & Grimes' No. 1 Edwards, NE cor. SW. Drilling at 2,550 feet.

Jackson County

15- 1-23w J. B. Abernathy's No. 1, C NW NW. Drilling at 2,000 feet.

McCurtain County

12- 1-26e Harris & Haun's No. 1 Cox, C SE SE NW. Rig up.

KANSAS WILDCATS

Sumner County

6-35- 1e Tidal Oil Co.'s No. 1 Milligan, NE cor. SE. Drilling at 1,050 feet.

26-33- 1e Waite Phillips Co. and others' No. 1 Pruitt, NE cor. SE. Drilling at 2,110 feet.

25-33- 2e Brady Brothers and Marland Oil Co.'s No. 1 Wood, SW cor. NE. Hole full of water in Wilcox. Fishing at 3,644 feet.

16-31- 2e Cosden Oil & Gas Co.'s No. 1 Shade, NW cor. SE. Drilling at 700 feet.

12-30- 4w Phillips Petroleum Co.'s No. 1

Smith, SW cor. SE. Drilling at 2,710 feet.

7-30- 1w Strosnyder and others' No. 1 Cutler, SW cor. NW. Spudding in.

17-30- 1w Champlin Refining Co.'s No. 1 Kraft, C NE SE. Small show of oil at 3,551 feet. Underreaming at 3,676 feet.

8-30- 2e McNabb and others' No. 1 Stubbs, SW cor. SE. Small show of oil at 2,624-25 feet. Hole full of water at 2,560 feet. Drilling at 2,850 feet.

14-35- 1e National Refining Co.'s No. 1 Henzel, SW cor. Rigging up.

16-35- 1e National Union Co.'s No. 1 Talmadge, SE cor. SW. Shut down at 2,445 feet.

Cowley County

5-35- 5e Overlease & Springstead's No. 1 Sterling, C NW SE. Shut down at 600 feet.

16-35- 5e Trees Oil Co.'s No. 1 Warren, SW cor. NE. Drilling at 3,300 feet.

5-35- 8e Buck and others' No. 1 Dale, SW cor. SE. Small show of oil at 2,325-26 feet. Shut down at 2,340 feet in lime.

33-34- 3e Arthur Rich and others 'No. 1 Boceston, SE cor. NW. 2,000,000 feet of gas at 2,060-65 feet, water at 2,066 feet. Drilling at 3,870 feet.

35-34- 3e A. D. Morton and others' No. 1 Jarvis, SW cor. NE. Spudded in and shut down.

20-34- 4e J. Nathan and others' No. 1 Goff, NW cor. Shut down at 650 feet.

32-34- 4e Kanotex Refining Co.'s No. 1 Whitney, NE cor. SW NW. Drilling at 1,650 feet.

4-33- 7e S. W. Forester's No. 1 Radcliff, NE cor. NW. Spudded in and shut down.

13-32- 3e The Texas Co.'s No. 1 Stagger, C NE NW NE. Drilling at 800 feet.

28-32- 3e Marland Oil Co.'s No. 1 Cochrane, NE cor. SE. Drilling at 3,650 feet.

3-32- 4e Indian Territory Illuminating Oil Co.'s No. 1 Lynn, SW cor. NE. Drilling at 2,100 feet.

31-32- 4e Bunnell & Day's No. 1 Weirr, C NE NW SE. Shut down at 2,700 feet.

34-32- 4e C. E. Dye's No. 1 Cowley County Farm, NE cor. SE. Shut down at 1,200 feet; litigation on.

7-32- 5e Arkansas Fuel Oil Co.'s No. 2 Grotsby, NW cor. SW. Shut down at 1,000 feet.

12-32- 6e Trees Oil Co.'s No. 1 Estes, NE cor. SE SW NW. Drilling at 400 feet.

28-31- 3 Arkansas Fuel Oil Co.'s No. 1 Waite, NE cor. SW. Small show at 3,080 feet. Shut down at 3,420 feet with hole full of water.

35-31- 4e Indian Territory Illuminating Oil Co.'s No. 1 Graham, NE cor. SE. Drilling at 2,400 feet.

21-31- 6e Marland Oil Co.s No. 1 Eddie, NW cor. SE NE. Drilling at 1,900 feet.

24-30- 6e C. W. Christy and others' No. 1 Ward, SE cor. Fishing at 1,800 feet.

4-30- 8e Roth & Farrout's No. 1 Hannah, CSL NW NW NE. Shut down at 2,214 feet with 600 feet of oil in hole.

14-35- 1e National Refining Co.'s No. 1 Henzel, SW cor. Rigging up.

34-34- 1w Shawver and others' No. 1 Johnson, SW cor. SE. Drilling at 2,195 feet.

Seward County

20-33-33w Seward Oil Co.'s No. 1 Sealy, NE cor. Show of gas at 2,415-27 feet. Shut down at 2,450 feet.

Elk County

21-31- 9e Tripplet and others' No. 1 Stiles, NE cor. 2,000,000 feet of gas at 1,460-80 feet. Shut down at 2,500 feet when casing collapsed; fishing.

Chautauqua County

2-33- 8e Ajax Drilling Co.'s No. 1 Shawver, SE cor. NE. Fishing at 500 feet.

17-32-11e Denman Brothers' No. 1 Kingston, NE cor. NW NE. Drilling at 1,970 feet.

Barber County

33-30-14w Wizzard Oil Co.'s No. 1 Hargus, NW cor. Had several shows of oil; shut down at 3,740 feet.

Kiowa County

33-29-16w J. M. Hayner's No. 1 Brown, C SE SE SE. Location made.

13- 7-16w Alcorn Oil Co.'s No. 1 school land, SE cor. SW. Underreaming at total depth of 1,860 feet.

20- 7-16w Conner and others' No. 1 Williams, SE cor. SW. Shut down at 976 feet.

Clark County

20-32-21w Watchorn Oil & Gas Co.'s No. 1 Morrison, SW cor. NW NW. Drilling at 4,870 feet with show of gas. Shut down for new elevator.

Montgomery County

2-32-13e Dunn and others' No. 1 Neiman, SE cor. NE. Drilling at 1,500 feet.

13-32-14e Galbraith and others' No. 1 Sloan, NE cor. NW SE. Drilling at 1,420 feet.

35-32-16e Bloom and others' No. 1 Dominy, SE cor. NW NE. Shut down at 900 feet.

Sedgwick County

14-29- 2w Curtis & Frost's No. 1 McMillan, SE cor. NW NW. Several good shows. Shut down at 3,608 feet.

2-29- 2e Higgins and others' No. 1 Flemming, SE cor. SW. Shut down at 1,860 feet.

29-29- 2e Hartman & Skaer's No. 1 Johnson, NW cor. SE. Drilling at 3,000 feet.

26-28- 1w Jasper & Beshka's No. 1 Whitten, NE cor. SW SW. Spudding in.

14-28- 2e Merriam and others' No. 1 Landon, SE cor. Drilling at 3,200 feet.

34-26- 1e Wichita Oil & Gas Co.'s No. 1 Tjaden, NW cor. SW. Spudded in and shut down.

6-25- 1e Boyle & Tack's No. 1 Shirk, NE cor. SW NE. Spudded in and shut down.

Butler County

30-29- 3e Walters and others' No. 1 Robinson, NE cor. Shut down at 2,250 feet.

29-29- 5e Shawver and others' No. 1 Clevinger, SW cor. SE NE. Shut down at 2,150 feet.

12-29- 6e Tobin and others' No. 1 Baker, NW cor. SE. Drilling at 2,100 feet.

22-28- 6e J. Sharp and others' No. 2 Pettit, SW cor. Spudded in and shut down.

18-28- 8e Jamison and others' No. 3 Dixon, NE cor. SE SE SW. Drilling at 3,940 feet.

22-27- 6e Wentz Oil Corp.'s No. 1 Stern, NE cor. SE. Shut down at 400 feet.

28-25- 6w Gano's No. 1 O'Halloran, NW cor. SE NW. Shut down at 3,470 feet.

17-24- 4e Connell, Mathews and others' No. 1 King, NE cor. NW SW. Spudding in.

27-24 6e Imperial Drilling Co.'s No. 1 Hanson, SE cor. NE SE. Shut down at 1,260 feet.

33-24- 8e Tom Miller's No. 2 Lample, SE cor. Shut down at 600 feet.

Harvey County

5-23- 1e Union Oil Co. of Colorado's No. 1 Goerz, SE cor. Spudded in and shut down.

11-24- 2e Shaffer Oil Co.'s No. 1 Thompson, NE cor. NW. Shut down at 2,745 feet with hole full of water.

27-22- 2 S. A. Hunter and others' No. 1 Simmons, SE cor. Drilling at 1,000 feet.

Hamilton County

5-26-41w Wood Oil Co.'s No. 1 Ransom, C NW NW NW. Helium at 1,700 feet. Shut down at 3,840 feet.

27-22- 2e S. A. Hunter's No. 1 Simmons, SE cor. Drilling at 1,100 feet.

Kingman County

34-27- 7w J. S. Haynes and others' No. 1 Garber, SW cor. NW. Shut down at 2,590 feet.

Greenwood County

7-25- 9e Griggs and others' No. 1 Wilkinson, NW cor. SW. Spudded in and shut down.

27-25- 9e Duncan & Markham's No. 1 Sallyards, SW cor. NE. Shut down at 2,310 feet; litigation.

33-25-10e Kinkadden's No. 1 Badger, SE cor. NW. Shut down at 600 feet.

30-25-13e Cory & Lloyd's No. 1 Brown, NW cor. NE. Drilling at 1,400 feet.

16-24-13e Joe Able and others' No. 1 Blackwell, SE cor. NE. Rigged up and shut down.

21-24-13e J. C. Moore and others' No. 1 Morris, SW cor. NW NE. Drilling at 700 feet.

1-23- 9e Prairie Oil & Gas Co.'s No. 1 Johnson, NW cor. NE. Drilling at 1,400 feet.

28-23-11e Simmons & Burk's No. 1 Ellis, NW cor. SE. Drilling at 1,600 feet.

11-25-12 Roth & Farrout's No. 1 Gilroy, NW cor. SE. Spudding in.

Reno County

13-23- 8w Reno Oil & Gas Co.'s No. 1 Short, NW cor. NE. Shut down at 3,515 NE cor. SE NW. Drilling at 1,400

3-22- 6w Hipple and others' No. 1 Salle, NW cor. SE NE. Lost hole at 3,815 feet.

Coffey County

13-22-13e Braden Brothers' No. 1 Lowbeck, SE cor. NW. Spudded in and shut down.

Finney County

33-21-30w C. J. Wrightsman's No. 1 Ludd, SE cor. Shut down at 2,840 feet.

Hodgman County

19-21-22w Krueger and others' No. 1 Frizell, SE cor. NE. Shut down at 1,000 feet.

Stafford County

23-21-11w Cooper and others' No. 1 Seigers, NW cor. SE. Small show oil at 1,200 feet and 1,400 feet. Shut down at 2,225 feet.

Rice County

16-21-10w Turman Oil Co.'s No. 1 Taylor, NW cor. Spudded in and shut down; legal difficulties.

26-20- 6w Midland Oil Co.'s No. 1 Johnson, SE cor. SW SW. Shut down at 450 feet for funds.

1-19- 7w Pryor & Lockhart's No. 1 Deeds, C NE SW NW. Spudded in and shut down.

22-19- 6w Emerson Carey and others' No. 1 West, NE cor. SW. Partly rigged up and shut down.

McPherson County

9-21- 5w Wolf Creek Oil & Gas Co.'s No. 1 Bernholz, C NE SE NW. Rig up, but was blown down in storm.

21-20- 5w Stamey and others' No. 1 Barnes, SE cor. SE SE NE. Iron at 2,160 feet; shut down at 3,110 feet for funds.

21-20- 2w Krown & Krown's No. 1 Lynn, C SE NW NW. Spudded in and shut down.

3-18- 2w Young and others 'No. 1 Anderson, NW cor. Rig up.

28-18- 2w Waugh & Casey's No. 1 Anderson, C SW. Shut down for pipe at 1,830 feet.

6-17- 4w Moore & McRoberts' No. 1 Ingermanson, SE cor. NW. Location.

3-17- 2w Wynn and others' No. 1 Olsen, C SW NW NW. Rig up.

Barton County

17-19-11w Huffine and others' No. 1 Smith, NE cor. SE NW. Drilling at 1,300 feet.

22-18-13w Mountain States Oil Co.'s No. 1 Everleigh, SE cor. NE. Had good show at 3,326-29 feet. Trying to shut out water.

17-18-12w Cheyenne Oil Co.'s No. 1 Shoay, SW cor. Had several shows, and pumped 5 bbls. oil at 3,385 feet. Shut down at 3,520 feet.

31-18-12w S. J. Haynes' No. 1 Taul, NW cor. Shut down at 2,000 feet.

36-15-13w Alcorn Oil Co.'s No. 1 Seller, SE cor. Hole full of water at 3,405 feet; cleaning out.

Chase County

21-19- 6e Kingwood Oil Co.'s No. 1 Ellston, NW cor. SE SE. Spudded in and shut down.

1-22- 8 Phillips Petroleum Co.'s No. 1 Irwin, NW cor. SW. Drilling at 1,600 feet.

Russell County

9-14-15w Producers & Refiners Corp.'s No. 1 Mermis, SW cor. NW NE. Hole full of water at 3,105 feet, lowering pipe.

5-12-15w Derby, Streeter & Sterns' No. 1 Sutton, SW cor. NE SW. Show of gas at 1,465 feet, drilling at 1,980 feet.

17-12-15w Valerius Oil & Gas Co.'s No. 3 Oswald, NW cor. Drilling at 1,200 feet.

18-12-15w Skelly Oil Co.'s No. 1 Oswald, NE cor. Spudding in.

23-12-11w Richey & Moore's No. 1 Dick, SW cor. NE. Shut down at 2,150 feet.

33-12-11w Pouder & Pomeroy's No. 1 Cooper, SE cor. Cleaning out at 2,000 feet.

Ottawa County

31-12-10w Berry & Rosenthal's No. 1 Lambert, C NW. Fishing at 3,255 feet.

Lincoln County

11-18-27w Robison and others' No. 1 Dickerson, CEL SE. Rig up.

36-13- 7w Waite Phillips Co. and others' No. 1 Paul, NE cor. SW. Spudded in and shut down.

31-12-10w Berry & Rosenthal's No. 1 Lambert, C NW. Dropped pipe 3,255 feet; shut down.

19-11- 6w Scott & Collins' No. 1 Stone, NW cor. SW NE. Shut down at 500 feet.

Ness County

35-18-21w Bell & Stratton's No. 1 Ryersee, C NE. Rig up.

Rush County

22-18-19w Raber and others' No. 1 Kirby, NE cor. SW. Spudded in and shut down.

10-18-16w Morgan & Downing's No. 1 Mohr, SE cor. SW. Spudded in and shut down.

18-17-17w Duquette and other's No. 1, NW cor. SE. Timbers on ground.

Ellsworth County

10-18- 6w Jasper & Beshka's No. 1 Walker, Sw cor. NE. Shut down at 2,100 feet.

3-14- 9w Kirkland and others' No. 1 Kettman, NE cor. Location made.

6-14- 9w J. Herron and others' No. 1 Casper, NE cor. NW NE. Spudded in and shut down.

24-14- 7w United Petroleum Co.'s No. 1 Walker, NE cor. NW SE. Spudded in and shut down.

Saline County

26-15- 2w Brown-Woodward Oil Co.'s No. 1 Shelton, SE cor. Shut down at 300 feet.

15-15- 4w Thrall and others' No. 1 Holinquist, SW cor. NW NW. Shut down at 1,010 feet.

Osage County

3-15-15e Baker and others' No. 1 Lowes, C SE SE SE. Shut down at 1,150 feet.

Russell County

9-14-15w Producers & Refiners Corp.'s No. 1 Mermis, SW cor. NW NE. Shut down at 3,130 feet.

1 Sutton, SW cor. NE SW. Drilling at 900 feet.

17-12-15w Valerius Oil & Gas Co.'s No. 3 Oswald, NW cor. Drilling at 1,300 feet.

23-12-11w Richey & Moore's No. 1 Dick, SW cor. NE. Shut down at 1,885 feet.

13-11-13w Sawtelle and others' No. 1 Pospishil, SW cor. Spudded in and shut down.

Geary County

30-13- 6e Marshall and others' No. 1 Foster, NE cor. SW. Shut down at 2,020 feet.

Ellis County

16-11-17w Howarth & Sparks' No. 1 Bemis, NW cor. Cleaning out at 1,825 feet.

Osborne County

9-10-14w C. E. Night's No. 1 Bealby, NE cor. NW NE. Spudded in and shut down.

Riley County

26-10- 6e Mutual Oil Co.'s No. 1 Marks, SE cor. NE NW. Shut down at 1,870 feet.

Pottawatomie County

11-10-12e J. J. Crawford and others' No. 1 St. Mary's College, SW cor. NE. Shut down at 2,250 feet.

Mitchell County

23- 6- 9w Wilcox Oil & Gas Co.'s No. 1 Elder, SE cor. NW NW. Fishing at 2,165 feet.

Clay County

19- 9- 4e Empire Gas & Fuel Co.'s No. 1 Woodberry, SW cor. NE. Drilling at 2,410 feet.

Graham County

23- 8-24w Keys Brothers' No. 1 Taxton, SE cor. NW. Drilling at 2,100 feet.

Rooks County

7- 8-20w Keys Petroleum Co.'s No. 1 Saindon, NW cor. SW SE. Spudded in and shut down.

30- 6-17w Marland Oil Co.'s No. 1 Lowe, SE cor. NE SW. Fishing at 565 feet.

Cloud County

6- 6- 4w Concordia Oil & Gas Co.'s No. 1, SE cor. Shut down at 365 feet for funds.

Phillips County

13- 5-18w Good & Chereuse's No. 1 McKinley, NW cor. NE. Shut down at 276 feet.

25- 4-16w Frost Drilling Co.'s No. 1 Hull, SW cor. NW SE. Shut down at 480 feet.

Decatur County

25- 2-26w Marland Oil Co.'s No. 1 Ranger, SE cor. NE NE Fishing at 1,465 feet.

NOCONA TO USE GAS

The Nocona (Texas) Gas Co. has awarded a contract to George F. Hall, of Mexia, Tex., to lay a pipe line to Nocona from the company's gas well 9 miles north of the town and service lines over the town and installation of meters. Work is to be started by April 1 and completed by July 1.

Artesia Field Has 12 Oil Wells and a 6,000,000-foot Gasser

By William McGinn

ARTESIA, N. M., Feb. 14.—Two more producing wells were added to the Artesia Pool yesterday. The first to find the sand was Keys and others' No. 1, SW NE of Section 19-18-28, about 2 miles north of the discovery well. The pay, according to the log, was found at 2,121 feet, this being considerably lower than in the majority of the wells in the pool. Drilled into a distance of 2 feet the hole filled one-third full of fluid in a short time. It has not yet been shot.

The Rotary Oil Co.'s No. 1, NW NE, Section 30-18-28, closely followed the Keys well, finding the sand at a depth of 2,020 feet.

The completion of these two producers will give this field a total of 12 wells with a 6,000,000-foot gasser and no dry holes to date. Production in the Picher No. 1, SE SE, Section 12-18-27, it is expected, will be increased following a shot to be given within the next few days. This well has been flowing 12 bbls. naturally, since last August.

It is the intention of Goodale and others to shoot their California No. 1 on the McCrary permit, 5 miles east of the productive area. One hundred and seventy-five feet of fluid is standing in the hole, according to reports, this coming from a sand and line between 1,498 and 1,510 feet. It will mean a 5-mile extension to the field should this make a commercial producer.

Another test to the east will be started immediately by D. C. Cheesman, of Shreveport, in the center of Section 35-18-28. Tools are now being moved to the lease. Following is a drilling report of the field:

Twin Lakes Oil Co.'s No. 3, waiting for boiler; No. 4, location made. Flynn, Welch & Yates' No. 6, drilling at 1,350 feet; No. 8, drilling at 1,100 feet; No. 9, location made. D. C. Cheesman's No. 1, waiting on tools. California's No. 1 Burgess & Goodale, to be shot; Gilliland Oil Co.'s No. 1, waiting on water. Eureka Oil Co.'s No. 1 Peckenpough, drilling at 2,050 feet. No. 2 Brown, shut down at 1,450 feet, gas showing reported. Reiff's No. 1 Standard of California, reported making new location. McNutt and others' No. 1, drilling at 200 feet. Danciger Oil & Refining Co.'s No. 1, underreaming 10-inch at 325 feet. Keys and others' No. 1, drilling in at 2,121 feet. Rotary Oil Co.'s No. 1, drilling in, 2,020 feet. Maljamar Oil & Gas Co.'s No. 1, waiting on tools. Ohio Oil Co.'s No. 1 Tracy permit, drilling at 750 feet. Arnott & Gross' No. 1, made location. Brainard's No. 1, drilling at 1,350 feet. George Bobb's No. 1 Thompson permit, drilling at 300 feet.

PROMINENT GEOLOGISTS STUDY BRADFORD FIELD

BRADFORD, Pa., Feb. 16.—E. W. McCrary of Tulsa, Okla., chief geologist of the Tidal Oil Co. and R. L. McFarland, general manager of the Twin States Oil Co. and a geologist of note, are making a study of the Bradford oil field as members of a committee appointed by the Federal Oil Conservation Board. They will investigate producing and marketing conditions in the Bradford district and will make a close study of the sand and its content and of means of extracting the oil left in the Bradford structure after 50 years of intensive operating.

ENGLAND BACKS OIL CLAIM

A London dispatch says the Anglo-Persian Oil Co. has complained to the British Government that the Italian protest against Albanian oil concessions granted the Anglo-Persian Co. is "unwarranted interference." It is understood the British Government has accepted this view and instructed its ambassador at Rome to make immediate representation to Premier Mussolini.

REFINING AND MARKETING

Cut Rate Oil Firm Sued by Kentucky For Gasoline Tax

LOUISVILLE, Ky., Feb. 14.—The Thomason Oil Co., oil jobber of this city, has been made a defendant in a suit brought by the State Tax Commissioner of Kentucky, to recover gasoline taxes. According to the State's suit, discrepancies have been found in the defendant company's reports to the State covering the sale of gasoline.

The commissioners reported that upon examination of records of railroad companies and comparison of these figures with monthly reports of the Thomason Oil Co., it was found that approximately 30 per cent of taxes due, amounting to $16,681.45, remain unpaid. The company last year gained notoriety as the leader in a gasoline price-reduction war.

Mr. Piazza, Assistant State Tax Commissioner, said that since the company's organization in February, 1923, until the new gasoline tax law went into effect June 18, 1924, discrepancies amounted to $5,524.97.

Since that time until the close of the year 1924, the shortages amounted to $4,906.84, it is alleged. According to the State gasoline tax law, the Thomason company will incur a penalty of 20 per cent due to the State road fund and also a 20 per cent penalty due to the State Revenue Agent, according to the petition. These penalties of the State amount to $6,249.64.

An offer of settlement was made to Charles Thomas, general manager of the Thomason company, but was rejected by him Mr. Piazza said.

INDUSTRIAL EXHIBIT A. O. M. A. FEATURE

An unusually interesting industrial exhibit will be a feature of the American Oil Men's Association convention to be held in the Kansas City Athletic Club March 17, 18 and 19 this year, according to an announcement by H. T. James, secretary of the association. In connection with this exhibit, Alph Honnett will deliver an address on the "Importance of Equipment in the Development of the Oil Industry." A few booths for exhibitors are still available. A conference of exhibitors will be held at Kansas City, Mo., February 27.

Reduced railroad fares have been obtained on the fare-and-a-half convention plan, providing 250 certificates are turned in to the secretary during the convention. The Kansas City Petroleum Club is making extensive plans for the entertainment of the visitors, including a dance following the annual banquet.

NEW TAX CONSTITUTIONAL

LANSING, Mich., Feb. 14.—The new State gasoline tax which was enacted by the present Legislature and which became effective January 30, was held to be constitutional in a decision handed down by the State Supreme Court.

The Detroit Automobile Club instituted the court action because of the provision which made the tax effective immediately, the attorney for the club declaring that such a provision is invalid and should therefore not be allowed to defeat a referendum by the people in November, 1926. Since the law is now in effect, it cannot, under the State Constitution, be referred to the people.

NEW MARKETING FIRM

A new marketing concern for San Antonio, Tex., has been organized by E. S. Smith and G. E. Smith under the name of the Alamo Petroleum Co. Its officers are in the Travis Building.

KANSAS CITY PLANS ENTERTAINMENT FOR WESTERN PETROLEUM REFINERS

Several entertainment features have been arranged for the Annual Convention of the Western Petroleum Refiners Association to be held at the Muehlbach Hotel in Kansas City, March 3, 4 and 5. In addition to the annual banquet on the evening of the last day an entertainment is to be provided Wednesday evening at the Kansas City Athletic Club. The Kansas City oil fraternity, with allied industrial interests of that city, through the Kansas City Oil Men's Club, are sponsoring this entertainment, the details of which will not be announced until that evening. On the same evening a theater party has been provided for the ladies.

Reduced rates to the convention have been arranged covering practically all points in the United States. The fare and half rate obtained for the convention is dependent on the securing of 250 certificates from those attending. The traffic committee of the association of which A. C. Holmes, traffic manager of the Empire Refineries, Inc., is chairman, is asking the cooperation of all those who attend in securing the reduced rate. The ticket sale at most points extends from February 27 to March 5. Those purchasing tickets are requested to secure a signed certificate which they will turn in at the convention. When 250 of these certificates have been received the holders will be entitled to the fare and half rate.

Two additional speakers for the third day of the convention were announced during the past week by Howard Bennette, managing director. T. T. Gray of New York will speak on "Refining Cracked Products in Vapor Phase." H. L. Shoemaker, assistant chief engineer of the Standard Oil Co. of New Jersey, will speak on "Fire Prevention." Both these addresses will be delivered at the breakfast Thursday morning. The program for the first two days of the convention has been announced previously.

CONNECTICUT GASOLINE INQUIRY

A bill authorizing immediate investigation of the recent sharp rise in gasoline prices has been favorably reported to the Connecticut Senate by the judiciary committee. It would empower the Legislature to conduct the inquiry and report by April 1.

EXHIBITS AT MOTOR SHOW

The Standard Oil of Indiana maintained an exhibit at the nineteenth annual motor show of the Kansas City Motor Car Dealers' Association. This was the first show in the history of the association at which the Standard of Indiana had an exhibit.

ENTERS MARKETING TRADE

The Wheatley Petroleum Co., of San Antonio, Tex., announces that it is entering into the general marketing of petroleum and petroleum products. Roy Wight is sales and traffic manager. The company has just completed its own pipe line and will handle its own production from Mirando City, Tex., in carload lots.

TO LIMIT FILLING STATIONS

An ordinance forbidding the erection of any more filling stations of any type in Oklahoma City has been suggested by Mayor Cargill. The mayor said he felt Oklahoma City now had filling stations enough to supply a city of 500,000. Curb pumps were barred in an ordinance just passed.

RATCLIFFE TO COAST

George L. Ratcliffe, formerly with the Peoples Natural Gas Co. at Pittsburgh, Pa., and recently a vice president of the Texas Pacific Coal & Oil Co. of Fort Worth, Tex., will leave March 1 for Los Angeles, Cal., where he will assume charge of the gas and gasoline operations of the General Petroleum Corp.

MONTANA DOUBLES GASOLINE OUTPUT; CONSUMPTION GROWS 7 PER CENT

The increasing importance of the independent refiners in Montana is revealed in the official State figures for 1924 showing the amount of gasoline manufactured and consumed in the State as well as the number of gallons imported and the amount sold outside of the State. The figures showing the total gallonage manufactured in Montana represent the output of approximately six operating refineries, which produced in 1924 a little more than 75 per cent of all the gasoline consumed in the State, although nearly 5,000,000 gallons was shipped outside Montana.

While importations amounted to approximately 40 per cent of the consumption in 1924, they constituted 65 per cent of the gasoline used in Montana in 1923.

Comparing the figures for the two years, the amount of gasoline manufactured in Montana during 1924 was more than double the gallonage for the previous year. At the same time, consumption in the State increased only 7 per cent, the net amount of gasoline used in Montana in 1924 having been 34,385,261 gallons in comparison with 31,156,613 gallons used during 1923. Importations correspondingly declined about 37 per cent, showing 21,104,474 gallons in 1923 and 13,336,962 gallons in 1924. While a comparatively small amount of the gasoline manufactured in the State was sold outside of Montana in 1923, the total having been only 620,095 gallons, last year the figure was 4,973,913 gallons, an increase of more than 700 per cent.

GASOLINE MANUFACTURED AND USED IN MONTANA—1923 AND 1924

	Manufactured in State Gallons	Manufactured and Sold Out of State Gallons	Imported Into State Gallons	Net Used in State Gallons
1923—				
First quarter	1,548,432	11,500	2,909,023	4,445,955
Second quarter	2,190,311	.....	5,722,500	7,912,811
Third quarter	3,444,275	.....	8,519,830	11,964,105
Fourth quarter	4,489,216	608,595	3,953,121	7,833,742
Total 1923	11,672,234	620,095	21,104,474	32,156,613
1924—				
First quarter	9,915,744	1,069,467	1,898,119	4,744,396
Second quarter	7,230,434	1,649,179	2,592,386	8,173,641
Third quarter	8,862,531	1,234,673	5,022,347	12,650,205
Fourth quarter	6,013,503	1,020,594	3,824,110	8,817,019
Total 1924	36,022,212	4,973,913	13,336,962	34,385,261

GASOLINE TAX RAISE PROPOSED IN CANADA

OTTAWA, Canada, Feb. 12.—The Government of Quebec will increase the tax on gasoline to 4 cents a gallon, according to an announcement just made. The present tax is 2 cents a gallon. It was imposed on April 1 last year, and to the end of 1924 brought in a revenue of $425,508. The present increase in the tax is being effected to make up for loss of revenue the Government will obtain by reducing the rate of interest from 3 per cent to 2 per cent on moneys borrowed from it by the municipalities for road building purposes.

The Toronto City Council has petitioned the Attorney General of Ontario to conduct an investigation into the recent rise in the price of gasoline, and also to ascertain whether there is a combine in the oil and gasoline business operating in restraint of trade. Alderman Claude Pearce, who is behind the move said Toronto would be paying 35 or 36 cents a gallon for gasoline by May as contrasted with 28 cents at present if steps were not taken to stop it. He said the big companies were killing off the small independent dealers after which prices in the districts affected were increased. He stated that Chelsea, Mass., where the municipal authorities has fought the big oil companies, had lowest gasoline prices on the continent.

The Provincial Treasurer of Manitoba, in his recent budget speech at Winnipeg, announced that the Government had decided to increase the tax on gasoline to 3 cents a gallon. The present tax is 1 cent a gallon.

The General Petroleum Co. is about to enter the Canadian Field in Vancouver, according to a statement credited to John D. Jordan, its Seattle manager. The company already holds lands under option and on these it plans to erect large storage tanks.

OIL CITY QUOTATION LOOKED TO ADVANCE

OIL CITY, Pa., Feb. 14.—There has been very little change in the price movement or demand for Pennsylvania petroleum products in the northwestern Pennsylvania refinery district during the past week. However, there does seem to be a tendency on the part of some refiners to hold back the sale of their products on the theory that prices will advance soon.

The movement of gasoline continues at a good rate but there has been little change, if any in prices. The situation as relates to kerosene is a peculiar one in that the price structure seems to be dependent to a great extent on the situation of the refiner, there being quite a range in the quotations for this product. The movement, however, does not seem so brisk as it has been. Cylinder stocks, neutrals, fuel oil and wax do not seem to be changed from the situation that prevailed with respect to them last week.

CHICAGO TRADE NOTES

CHICAGO, Feb. 13.—The Henry H. Cross Co., of Chicago, began operating its recently acquired refinery at Portland, Ind., on February 9 and will run approximately 1,000 bbls. a day.

The American Oil Corp., of Jackson, Mich., has established an export office at 59 Pearl Street, New York City, under the management of A. H. Taylor. A. J. Callaghan, president of the company, has just returned from a visit to the office in that city.

The Indian Refining Co. has sold or leased a number of its filling stations to the Crew-Levick Co., or its subsidiaries. The stations are in outlying locations and include a bulk station at Kansas City, a bulk and filling station at Charleston, W. Va., and stations at Syracuse, Schnectady and Long Island City.

Sites for Natural Gasoline Plants

Location Should Take Into Consideration Gas Supply, Disposal of Product and Terrain. Elevation and Drainage Important

By Frank P. Peterson

Prior to about 1917, the Gypsy Oil Co.'s plant at Keifer, F. C. Henderson's plant at Childers, Cosden Oil & Gas Co.'s plant at Shamrock, and two or three California installations were outstanding examples of large plants. Others comparable in capacity were few and not of the writer's knowledge. These examples were compression plants.

At the time these plants were built, the process, (if it may be so defined for simplicity of description), recognized as standard was compression and, while the industry had an approach to standardization at least in elements of process, the case of the Gypsy Co.'s plant at Keifer had gone beyond the simpler ranges of cooling and had applied refrigeration and some noteworthy operation had developed absorption at rather high ranges of pressure. For the greater part, however, manufacturers and users of plant equipment were plugging along slowly in the direction of a standardization line of equipment and its arrangement with reference to the straight compression method.

The scheme consisted briefly of fluid separators, compression in two stages, with inter-coolers and more separators between and after these stages of compression. The separators were of the vertical tank type, having, usually, deflector plates set to act as gas inflow baffles. The cooling coils were being rapidly reduced to a common arrangement of 2-inch pipe set within louvre walls. These coils were in multiflow banks and commonly headered into unit separators or accumulators corresponding usually in number to the number of compressing units, drenched with water from overhead sprays, and expected to reach temperatures somewhere approaching that of the wet bulb. In view of the requirement for large amounts of water for cooling in large plants, the water so employed was almost without exception cooled atmospherically and used over and over. This operating condition led toward the provision of large catch basins under the louvred coil areas, with usually an adjacent earthen reservoir of capacity of some days' or weeks' run.

Absorption Development

Contemporaneously with the last three years of aggressive progress of compression plants of large proportions, the development of the absorption process had been coming apace. This was, however, somewhat chaotic; not only as to elements which might be resolved into physical standards, such as range of operating pressure, amount and kind of oil used, etc., but much more so in type and kind of equipment used.

If we let the foregoing serve as an introductory resume of progress in the industry to the time mentioned, we shall see that almost no definite trends had developed outside of the compression process. Beginning with and developing since 1917, the trend is well marked toward the universal use of the absorption process except for the strictly lean range of gases, and we may seek to establish standards of design, construction and operation in terms of absorption for probably as much as 80 per cent of the future total yield of gasoline from natural gas.

Up to 1917, a plant with gas displacement capacity of over 5,000,000 feet daily was a thing of marvel to oil men.

Manufacturers, particularly of engine and compressor equipment, were proud and boastful of photograph records of long, unbroken rows of engines, and how beautifully those long rows do appear in the camera.

With adoption of the present ranges of pressures employed in absorption operations, one of the big factors in plant cost, namely compressor equipment, was cut to less than half its previous amount, and a step so momentous was made that the field of flush gas conservation was opened wide to the industry. And, beginning with Phillips Petroleum Co.'s initial step with a flush gas installation of 30-pound pressure absorption in the Osage in 1918, the progress of the industry has gone on uninterruptedly to the present stage wherein plant capacities are ordinary in ranges well above 20,000,000 feet daily gas displacement. In this range of capacity the cost of plant installation will approach or exceed $1,000,000. This cost must be distributed to a multitude of items from the provision of water supply to that of shipping tags.

The difference between rational, well planned selection and placing of the materials and equipment of plant and the other extreme can be so great as to amount to the difference of success and failure to realize the return of the investment and the profit sought.

Plant Equipment

Plant must include in its wide range of materials a water source, the pumping and distribution of the water; a gas gathering system involving most frequently outranging vacuum booster stations of considerable extent of machinery; plant proper compressors and auxiliary machinery; absorption process in which detail are embodied absorbers, stills, exchangers and the pumping equipment for movement of the medium (oil) of absorption; steam plant, boilers, pumps, heating system and the distribution of steam to such process details as stills and the weathering and treatment (stabilization) of stock products of operation; an electric plant, for driving of important functions of process equipment and, in any event, plant lighting; storage of plant product at plant, and storage of water supply; residence quarters for plant men; a distribution pipe line system of residual gas for field and plant fuel; pipe line for transportation of plant product; a station, including adequate storage facilities, rail rack for loading of product into tank cars, and such auxiliary rack equipment, usually a small steam plant and office and residence accommodation for the man in charge and, in some instances, his operating forces; laboratory equipment and laboratory, the latter located at plant and at rack when the distance is more than a few hundred feet between these major factors.

It is readily seen that the rational design and arrangement of large gasoline plants is a worthy subject for study, particularly in that large savings can be effected in initial investment; factors of operating convenience and efficiency can be strongly developed, thus effecting further savings which become large in that they are extended to and throughout the life of plant operation. And while it is not assumed that standardization of material or arrangement of plant can be reached ideally, any more than can that of automobiles or trucks, something like the same relative degree of standardization can be reached. There exists one marked difference; some important details of materials of equipment are yet needed and have not been brought out for the use of the industry. Expositions, such as have been organized the past two years at Tulsa, serve admirably to expose these unfilled gaps in the ranks of materials used and sought by the petroleum industry as a whole. And lest the matter be overlooked or considered out of place in the discussion to follow, let me mention one very important need in the natural gasoline branch of the industry yet unsatisfied; that of a light, portable form of low pressure gas booster unit. This unit should be of such character as to permit its temporary setting on timbers or very light concrete foundations, so light and compact as to permit of quick and easy setting, removal and resetting; it should embody displacement capacity conformable to a reasonably heavy limit of weight and power equipment; probably two unit sizes would be sufficient, and its pressure range should be from about 10 inches mercury vacuum to about 7.5 pounds normal and 10 pounds maximum delivery (gauge). This is a very worthy detail for manufacturers to consider and it will in all probability appear in the market soon. Other improved details of condensing, cooling, and of still and stabilized equipment, adapted particularly to the need of this branch of the industry are yet to appear. But we shall deal with the subject in those phases only which can be satisfied ideally as far as possible with materials now obtainable, letting the future take account and make use of those which are not now available.

Stages of Construction

Development of the several stages of construction of plant begins with:

First, selection of the gas supply.

Second, selection of plant site with reference to gas supply, redistribution or disposal of same, and disposal of gasoline product.

Third, selection of site with reference to terrain, and surface and subsurface materials to be encountered in construction.

Since there are many details under these subdivisions to be weighed and settled, we had best take up and finish each as it occurs.

The first of the foregoing, selection of gas supply, may scarcely come within the scope of the plant layout man's responsibility, and yet the ultimate relationships to come between general proportions of plant, and gas volume with relation to product yield, is too obvious to require further discussion. Type, also, and extent of plant equipment are intimately related for ultimate efficiency to volume and quality of gas to be handled, and, if these factors may not be the concern of the layout man or the designer, he must then be amply safeguarded by the judgment of such a consultant as may have broad and safe perception of field condition existing and intelligently prognosticated. This with regard, of course, especially to the pioneer effort in any field. Naturally, late comers may enjoy the advantage of accumulated data. The difference for observation purposes of a few weeks in the declines shown for gas volumes may save thousands of dollars in equipment cost; but mature judgment, developed after inspection and study of subsurface data of a field, together with known characteristics of gas and oil produced, will permit no serious mistakes to be made.

Selection of Site

The second consideration, that of selection of plant site, must take into account the two important factors of outlay involved in more than one direction.

One would conclude readily enough that plant site could admit of no argument where the question arises first of centralization with reference to gas source and the reaching of that source with relatively large pipe sizes, since the cost factor runs high in this detail of investment, and since a centralized location might minimize the use of large gas gathering pipe. Such a conclusion might readily reach the side of error, when the determining factors for the selection of site in detail are properly weighed. So we have, most frequently arising, the problem of the third foregoing consideration, that of driving the stake for the actual space of ground to be broken.

Fields, or pools of production have a wanton disregard as to whether they may spread over serene wooded hills, smiling prairis, or lurking floodlands. Quite conceivably a central site selection might involve an expensive protective dyke and a system of floodwater disposal inconsistent in first and maintenance cost.

Revenue is to be derived from two products of operation—gasoline and gas—when disposal of one or both products may lead in one direction and this direction for the shortest lines of transportation may favor also a reduced cost of transportation of material of construction, these three factors may reach considerable proportions. This will be especially true if one or more of these three directions involved may not coincide with a fourth which might bring abundant water through the shortest distance to plant site.

Elevation, slope or contour affecting site drainage, and, also, the material of the site surface, whether hard rock, firm earth or shifting sands, will call for sound consideration in detail of site location, since these have their effect to be weighed sometimes in terms of wide

RATIONAL DESIGN AND ARRANGEMENT OF LARGE NATURAL GASOLINE PLANTS

The accompanying article is the first of a series by Frank P. Peterson dealing with the general subject "Rational Design and Arrangement of Natural Gasoline Plants." Other articles will appear in later issues of The Oil and Gas Journal.

Mr. Peterson is one of the veterans in the manufacture of natural gasoline, the youngest division of the oil industry. As an engineer he has been connected for several years with the construction and operation of several of the largest and most efficient plants in the Mid-Continent Field. At the present time he has charge of the operation of one of the latest constructed natural gasoline plants in Oklahoma.

In this article Mr. Peterson discusses:

1. Selection of the gas supply.
2. Selection of the plant site with reference to gas supply and redistribution or disposal of same.
3. Selection of site with reference to terrain and surface and subsurface materials to be encountered in construction.

In the February 26 issue of The Oil and Gas Journal Mr. Peterson will discuss Plant Equipment.

variance of first cost and again further in terms of operating efficiency, and finally of comfort and appearance. And plant site can only be disposed of after commanding attention to the several factors suggested in the foregoing. A reduction of as much as 5 or even 10 per cent may be effected by sound estimation of plant site advantages and selection of the most favorable location.

Arrangement of Plant

Under arrangement of plant, i.e., the relative placing of major functions of operation comes another group of problems for solution:

First, that of minimum safe distancing, which will save cost of excavation for and placing of these functions and their connection together.

Second, elevations.

Third, drainage scheme.

Fourth, appearance.

Fifth, total space occupied and to be enclosed.

Under the first of the above factors for consideration falls an important variable of installation cost. Since the use of large pipe and fittings is required, every foot and detail of these materials cut out of the scheme saves an appreciable outlay in material cost, not to mention the further saving of installation expense, which is usually equal to or may exceed the material cost. Compactness of arrangement and as close connecting as safety will permit will reduce perceptibly the pressure drop factor of operation; also, will promote closer operative inspection and attention, and these two factors make for increased efficiency of recovery and plant yield. By such arrangement, the number of possible connecting joint leakages is reduced to a minimum, and also the hazards of expansion and contraction due to severe changes of temperature.

Elevation Scheme

The second factor, that of elevation scheme is second in importance to plan arrangement and spacing of functions. The writer has never been able to appreciate fully the advantage of a dead level arrangement of the several functions of equipment though this would seem to command a large measure of respect, chiefly for appearance, in the minds of some layout men. Since utility will be served favorably in certain directions of the flow arrangement of operation by varying levels of location, the scheme of adaption of site contour to such levels where they would naturally serve favorably appeals to the writer. Fire hazards of still settings, heat exchangers, boiler furnaces and plant stock storage will be reduced by so placing these functions that a rupture of a still or heat exchanger and the possible spread and ignition of hot oils would be away by gravity flow from all other functions of operation. Natural selection of terrain favorable would place, then, stills and heat exchangers at one low point, and plant stock storage at another.

Since the spread of escaping vapors in case of momentary emergency cannot be entirely controlled, due to wind velocity and prevailing course of winds, not everything can be done to anticipate maximum safety in such contingency; but such small measure of safeguarding judgment as may be employed is worth while certainly in conjunction with the major considerations above noted.

Ideal Surface Contour

In a grade or elevation arrangement which spreads over 300 or 400 feet distance, a drop of 3 to 6 feet will be easily permissible and with a slight convexing of surface with axis up and down grade, stills may be located on one down flank, boilers at the crest, and storage on the other down flank, and with such arrangement, very little fire wall protection will be required of construction. Frequently a site conforming to such an ideal surface contour can be had. Fire walls call for concrete. Concrete is a heavy factor of construction cost. Concrete has great permanency; 15 to 30 years may reasonably cover the span of its usefulness to gasoline plant operation. Therefore, we minimize but do not skimp the use of concrete. These factors of relation between still, boiler and storage to contour are the most important. There follow those of the other functions of plant, engine room, auxiliary building and equipment, cooling tower, absorbers, condensers, accumulators, etc., arrangement of which may be disposed of largely as matters of reduced cost, and of convenience to operatives to whom they will be entrusted in their use.

Drainage

The third factor, drainage, should have a good measure of attention. The surface of the site should be given, as far as possible, this little responsibility. While sewers may be made to serve the purpose, yard, like road surface, may be made, usually with a small amount of grading, to serve a quick, clean drainage duty to the best possible advantage. Such attention to detail in plan layout will again favor the minimum use of concrete material in the construction of walkways.

As to the four factor, appearance, of course, tastes will differ, This fact is responsible for the science of architecture in particularly the diversified range of residences, churches and edifices generally which men admire; but in an assembly of chiefly tanks of the up and down kind, of a rather monotonous grouping of broad slats, a few usually bruised and much guy strung stacks, and a rather drab grouping of crimped iron buildings, the most comforting suggestion one can get out of it for architecture's sake is one that one's grandmother used in early admonishments of a moral aspect, "Pretty is as pretty does," and let it go at that. To be serious, however, a little attention to symmetry of arrangement can usually be made to bring out a pleasing aspect, and this is rather to be sought than wholly disregarded.

Quadrangular Arrangement

The fifth involves effort toward a quadrangular arrangement, since this cuts the lines in all directions, even of fence material. The chief factor to be sought, in reality, is that of the maximum of convenience and of visibility of all plant elements which require to be watched and attended.

Residence quarters for operatives should be located as reasonably close to plant as safety will permit, on the opposite side from plant storage, and on a dropping slope, if possible, away from plant. All things properly weighed suggest selection of an elevated space for plant site. Since ideals can, by no means, always be realized, the range of preference will be from an elevated ridge with easy gradients of the area required to a like space depressed, if nothing else can be found. Time was when it was difficult sometimes to obtain a plant site, because of the great fear of fire hazard. So surprisingly few bad fires have occurred at plants, much of the prejudice is gone, and ground space can usually be chosen pretty much to suit, so far as acquirement is concerned.

Loading Rack Site

Much less latitude is given in the selection and acquirement of loading rack site than in that of plant site; so little, indeed, that it is a matter of good fortune to be able to obtain an ideal site. Such a one would have the rack spur thrown around the base of a hill, with a gorge receding away from main track line, storage to be located on an elevation just over the hill crest from main line and at the same time sufficiently above loading spur to permit gravity loading.

Why the gorge?

Because, while so far it has not occurred, the writer has always shuddered to think of the possibility of a passenger locomotive furnace plowing through an accumulation of escaped loading rack vapors. None too much care can be taken to either burn, as they escape, or direct these heavy vapors to a low point, where they may do no damage.

Conservation commissions, if there be such things, could well direct attention to open minded recognition of what does go on, and permit or encourage the burning of wasted vapors and gases where they are permitted to be wasted. There may be something useful or beneficial in allowing gases and vapors of the petroleum family to escape into an atmosphere as foreign as ours is from their nature, but the writer cannot understand how that can be. Their products, burned up, would help to feed and sustain plant life and the heat of their combustion would be given at least to the earth's envelop. However, meditations along this line contribute nothing to the design and arrangement of gasoline plants.

NORTH TEXAS GASOLINE UP BUT FUEL WEAKER

FORT WORTH, Tex., Feb. 16.—Outstanding features of the week in the refined oil market of North Texas was a continued strengthening of prices on the lighter products such as gasoline and krosene and a slight weakening of the market on fuel oil and gas oil.

The strengthening on gasoline and kerosene was not unexpected, in view of the increase in the price of crude. The weakness in the fuel oil market was no doubt due to the railroads having been such heavy buyers recently. They seem to have about supplied their demands and inquiries from other sources were not sufficient to sustain the prices brought about through heavy buying by rail lines.

The market on United States motor oil late in the week was 13½ to 14 cents. Before the posting of the advance in crude the market was fully 1 cent lower. There were no real heavy purchases of this product reported; however, the Gulf is reported to have made a purchase of 50 cars for its Texas stations. This purchase was made the day before the crude advance and was booked at 12½ cents. This shipment is coming out of the Wichita Falls territory.

The 58-60, 450 product was quoted late in the week at 13¼ to 13¾ cents and 64-66, 375 was being quoted at 16½ to 16¾ cents. Marketers and refiners alike report heavy inquiries from exporters, particularly from Imperial, Sinclair and Atlantic. These inquiries however, are failing to bring out much product. A number of refiners in the Wichita Falls district are still making deliveries of gasoline at around 9 cents per gallon, sales made in January for delivery this month.

The market on natural gasoline is on the advance and very firm. Quotations, Breckenridge points, for the week on grade A were 12½ to 12¾ cents, grade B was quoted at 11¾ to 12 cents and the C grades were being quoted at 11¼ to 11½ cents. There is a big demand for this product and only small quantities to be had at present prices.

Kerosene showed unusual strength late in the wek, probably as a result of the advance of 1 cent by the Standard of Indiana. Quotations on 41-43 water white kerosene were 4¾ to 5 cents. The 42-44 grades were being quoted at 4⅞ to 5⅛ cents.

The market on gas oil developed a little weakness during the week. Quotations on 32-36 gas oil were 3⅝ to 3¾ cents. On 24-26 fuel oil quotations were from $1.40 to $1.45 per barrel, considerably under a week ago. Some significant sales were reported at slightly less. Considerable fuel is being offered in the Wichita Falls territory at $1.40 per barrel.

REFINED MARKET IS QUIET IN OKLAHOMA

(Continued from Page 20)

wagon schedules. Should no crude changes be announced it is the consensus of opinion that refiners will have difficulty in maintaining the price established during the past week.

Fuel Oil Situation

The soft spot market in fuel oil and distillate is very disappointing to the sellers who had expected to be able to offset at least a small part of the increased costs with higher prices for these two refined products. The decline in prices instead of an advance can probably be explained as a development of the price trend in coal. Prices on bituminous coal after a slow advance the latter part of last year started to decline about a month ago.

Market observers in that industry state the sag is due to overoptimism on the part of the coal operators who overestimated the requirements of consumers. The industrial demand, it is said, has not come up to expectations. It is also pointed out in some sections that fuel oil has reduced the demand for coal. Bituminous coal prices have been relatively low for over two years and with a slumping market competition is keen between coal and fuel oil.

Reports from all the main consuming areas show that the coal sellers acting as individuals or through organizations are using every means possible to secure the return of consumers to coal from fuel oil or distillate. The present fuel and distillate market indicates the success of their efforts. This sluggish market for the refined products has developed despite the fact that up to the first of the year at least the statistical position of fuel and distillates was fairly strong in all refining centers east of California.

No improvement in fuel oil and distillate is expected. The consuming season for the latter product will be finished in another month. Higher gasoline prices, if they continue, will aid fuel oil, kerosene, distillates and gas oil since refiners will operate their plants with the view of securing a maximum yield of gasoline. This development has already aided gas oil as refiners have been in the market to buy the product to use as charging stock for their cracking stills. This shift in plant operations and output develops slowly, however, and it will not be reflected in fuel oil prices until later in the year, if at all.

Gasolines and Naphtha

The advances in gasoline and naphtha were previously explained. The movement is largely confined to shipments on marginal contracts and orders placed in January and early in February. Refiners report maximum shipments on their marginal contracts due to the fact that the contract price is lower than the spot market. There were numerous rumors regarding export orders but so far as known no new business was placed during the past week. Refiners were asking as high as 17 cents for export 64-66, 375 for February delivery and more for March shipment.

Kerosene and Distillates

The advance in kerosene developed as soon as the crude price change was announced. The higher prices are not due to any increase in demand. Several of the larger refiners take the position that they cannot afford to sell kerosene under 5 cents based on the present prices for crude and gasoline. One refiner stated he could secure more than 5 cents for his kerosene by cracking it and selling the gasoline. Distillates are very sluggish and several refiners have already stopped making the product. Scattered sales of 38-40 straw distillate were made during the week under 4 cents.

Natural Gasolines and Blends

Natural gasoline prices were advanced along with the refinery grades. The price range in Oklahoma on the "A" absorption grades varies ½ cent between the high and low quotations. The larger manufacturers are asking 13½ cents for the "A" grades, but scattered cars are available as low as 13 cents.

Lubricating Oil and Wax

Cylinder stocks are fairly active, the demand coming from exporters. A few manufacturers advanced their quotations with the higher crude prices. Neutrals and bright stocks are unchanged. There are still many inquiries for wax and prices are firm.

Fuel and Gas Oils

Sales of the lower gravity fuel oils were reported as low as $1.25. The 24-26 grade sold at $1.30 with a price range up to $1.35. The 32-36 gravity gas oil is firm at 3¾ to 3⅞.

ARKANSAS CONSERVATION

Governor Terral of Arkansas has approvde an act creating the office of conservation commissioner, who assumes the duties of State oil inspector and inspector of feeds and fertilizers 90 days after adjournment of the Legislature.

CHICAGO JOBBERS RELUCTANT BUYERS

Reports of Gasoline in Transit Holding Back Prices. Good Business for Season. Kerosene Profits by Crude and Gasoline Rise Fuel Oil Not Active. Gas Oil Fairly Strong. Furnace Oil Quiet

By J. B. Waldo

CHICAGO, Feb. 14.—"What is the Chicago market for U. S. Motors gasoline?" was the question asked of one of the live wires in the marketing business. "Every one is entitled to one guess; what's yours?" was his answer. The reply was 13½ cents. "I just bought five cars at 13 cents and five more at 13¼ cents and that is all the gasoline we own or intend to own?" was the rejoinder. This in a way shows the condition in the Chicago market. There is supposedly a lot of gasoline in transit and so long as that lasts there will be a lower price here than refiners are asking at the plant. Some refiners have stated they should continue to sell at 13¼ to 13½ cents unless there was a further crude advance as they did not propose to carry any stocks but keep the bottom of their tanks in sight right along. The jobbers are still reluctant buyers but as much in many cases because they do not need the gasoline as because they object to the price. Their only real objection is the way the public may take the advance. Some remark about the added investment required to handle the same volume of business at the new prices but this is only an incident.

Good Business for Season

Jobbers who have been in the market during the week have reported a good business for the season with daily sales considerably ahead of 1924. In nearly every instance jobbers say their sales of the higher grades has become an important part of their business and they expect the demand to increase, although some are a little doubtful if the public will buy as much of the more expensive grades at the higher prices that will prevail from now on. As it is, the spread between the refinery prices of the usual quality and the higher gravities has increased until there is not as much profit for the distributor in the latter as two months ago. The higher gravities, the 60-62—400 and the 64-66—390 or 375 e. p. are hard to buy here for early shipment. There is very little of the 68-77—365 offered. Natural gasoline has increased in price so fast and the supply available here is so limited the market is little better than nominal. One dealer was quoting a price of 12½ cents for grade A and saying he would pay 13 cents for it if he could find it, this, of course, for prompt shipment but the understanding here is the output is sold well ahead. One buyer stated his only reply to his inquiries for prices was "Sold ahead."

Kerosene Profits

Kerosene has profited by the increase in the crude and tank wagon price but it is not showing anything like the strength of gasoline or what its friends believe it should show. One refiner who still believes kerosene is a worthwhile product said that under the present crude costs he should be getting 6 cents for 41-43 water white, but the best price he had heard named by any refiner was 5½ cents and this was away out of line with actual sales being made at 4⅞ to 5 cents with the 42-44 water white quoted at 5 to 5¼ cents. The trade believe that very shortly the jobbers will begin to fill their tanks for the spring demand from the tractors.

Furnace Oil Quiet

The market for oil for domestic burners has been rather quiet with free offerings and a limited demand. There have been a couple of cold days and this with the crude advance has just about prevented any declines. The jobbers are not wholly pleased with the way the business has developed during the season and one hears a good deal of rather revolutionary sentiments expressed regarding their proposed plans for the coming year. Fewer grades and larger tanks in the homes are two items emphasized as most essential. The local association of oil burner manufacturers is talking of having three grades. One large distributor is emphatic in his statement that next year he will only stock one gravity and that colored kerosene which he says is the only oil that will surely give satisfactory results in all burners in all kinds of weather. Several pronounced their opinion that the gravity feed burners were the more practical at least for the smaller towns.

Fuel Oil Not Active

Fuel oil is not active and it would be lower if the advance in crude had not come.

It is believed the increased output of the Mid-Continent plants as shown in several reports will result in larger supplies of fuel oil and as the best months are passing they are rather expectant of less business and possibly lower prices depending to some extent on the crude situation. Marketers report various prices but the general range is from $1.30 to $1.35 for refinery and Smackover at a nickel less.

Gas Oil Strong

Gas oil is fairly strong. The trade has remarked that there is so much offered with such a large production of gasoline. The demand from the domestic oil burners and from manufacturers who use a lighter oil in cold than warm weather will shortly disappear and this is making dealers and buyers both cautious in purchases. The range for gas oil, distillates and kerosene is almost overlapping in some instances. One seller is asking 4 cents for gas oil and another 3⅞ cents for distillate which is evidence there is a quiet situation. The general price for a straw gas oil is around 3⅜ cents.

Lubricants Frm

Lubricating oils are very firmly held and the demand is good according to most accounts. The export demand is playing quite an important part, although there has been less new business since the advance in prices but the trade here believes this is only temporary and that the foreign buyers will have to have their oils and will pay the prices asked. These are generally higher and very firmly held.

REFINED OIL MARKETS IN THE EAST CONTINUED FIRM DURING WEEK

By N. O. Fanning

NEW YORK, Feb. 14. — The refined oil markets in the East remained firm during the past week. There were no further price advances of importance, however. It is believed the market will remain at present levels for several weeks, until the situation in the oil business can be further appraised.

The continued advances in crude oil prices in all the principal fields have brought the crude market more in line with gasoline here in the East, but one more crude advance is expected to complete the adjustment. Even with another advance in crude the gasoline price structure is not expected to go higher.

The higher price levels for gasoline has brought about a movement of the product to this territory from the Mid-Continent which has not yet reached proportions sufficient to cause any basic change in conditions. That is, gasoline is still somewhat scarce, and there are no apparent price wars.

The weather during January and the early part of February has been scarcely favorable from the viewpoint of gasoline consumption. Nevertheless, the use of cars has been surprisingly great under the circumstances. In New York City the use of buses and taxicabs, the number of which has increased 50 per cent in the last year, was enhanced by the bad weather, many car owners whose machines were laid up using them.

Eastern refineries have increased their output of gasoline materially in the last few weeks, and supplies on hand are much larger than at the close of December. This condition is entirely seasonal and does not constitute a menace to the price situation. Based on consumption even during the last week or two of unfavorable weather, the oil industry will have all it can do, in the opinion of refiners, to supply the spring demand.

Looking Ahead

The cry has gone up in the East that the sharp rise in oil prices since January 1 constitutes a menace to the industry as encouraging a new flood of production. While the future alone can decide the result of these advances, the belief is held among the more conservative men in the oil business that these increases were the only possible means of assuring an adequate supply of oil for the spring, summer and fall demand this year. In other words, the rise in prices was effected because there was fear that unless drilling was encouraged production would go much lower in the United States this year than last.

Well informed oil men feel almost certain there are yet large oil fields in Texas, California and other States waiting to be tapped, and they believe higher prices will encourage drilling to the extent that some of these fields will be uncovered this year.

While the discovery of new fields this spring would add materially to production, the result would be to stem the rise in prices beyond a level which would be considered healthy. If things go according to prediction, the belief is held that present prices will be maintained at least until fall, and there may be further increases if production does not hold up.

Whether prices hold up or go higher in the fall depends upon the effect of new drilling.

Kerosene Firm

There has been no change in kerosene prices in this territory despite this was about the only part of the world in which the quotation has not advanced since January 1. Naturally an advance of 1 or 2 cents is still expected.

Furnace oil is firm, and consumption is holding up well. It is still quoted at 10 cents for 38 gravity in tank wagon lots of 500 gallons or more.

Gas oil remains unchanged at 6¾ cents per gallon at refineries. No important new business is reported.

Diesel oil is steady at $2.70 per barrel. Consumption of this product has reached new high levels at this port since last December. Many vessels are undergoing conversion to burn this grade of fuel oil, and new ships being built are in many cases to be equipped with Diesel engines. Contrary to expectations, the abrupt advance in the price of Diesel oil does not seem to have resulted in any material decrease in the demand.

Bunker oil remains at $1.80 per barrel. An advance to $2 or more is expected soon.

Lubricating Oils

The demand for cylinder oils has slackened up materially, and red oils are not in any greater demand. Despite advances in red oils at Gulf Coast, the eastern market remains unchanged. It is expected these will advance in the near future.

Paraffin wax is firm, but the demand is still light.

The export movement of gasoline, kerosene, gas oil and fuel oil from this port is considerably below expectations, due probably to a seasonal lull and unfavorable shipping conditions. The exportation of lubricating oil in barrel lots is the only redeeming feature of the export situation. Shipments in barrels last week aggregated 1,519,550 gallons, against 2,150,200 gallons the week before and 1,012,000 gallons two weeks previous.

The only bulk export cargo reported was that of 269,063 gallons of gas oil shipped by Standard of New Jersey to its Canadian subsidiary, Imperial Oil, Ltd.

Exports of lubricating grease were unusually heavy during the week ended February 11, amounting to 4,222 barrels.

Paraffin wax shipments aggregated 937,200 pounds of refined wax and 2,541 bbls. of unrefined.

The following table shows principal exports of petroleum and petroleum products from New York reported during the past three weeks (figures in gallons unless otherwise stated in parentheses):

	Week Ended		
	Feb. 11	Feb. 4	Jan. 28
Gasoline:			
Cases	1,142,960	1,858,020	1,072,800
Kerosene:			
Cases	1,228,280	973,321	2,992,340
Fuel oil:			
Bulk	269,063	.....	.....
Lub. oil:			
Bulk	.....	1,485,087	.....
Barrels	1,519,550	2,150,200	1,012,000
Cases	97,170	133,540	.....
Lub. grease:			
Barrels	4,222	.....	515
Paraffin wax:			
Bags (lbs.)	937,200	682,440	110,000
Barrels	2,541	.....	2,826
Crude oil:			
Barrels	5,800	3,316	505

Oil Receipts Gain

Receipts of crude and refined oil at Atlantic ports by water averaged 485,000 bbls. during the week ended February 11, against 444,000 the preceding week. The feature was a gain in imports from countries other than Mexico.

Imports from Peru and Venezuela averaged 55,000 bbls. daily, of which 45,000 bbls. daily were from Peru alone. Imports from Mexico, nevertheless, were heavy, averaging 111,000 bbls. daily. Imports from Peru exceeded receipts from the Pacific Coast, which averaged 42,000 bbls. during the week.

The following table shows estimated daily average receipts of crude and refined oil by water at Atlantic ports from Gulf and Pacific Coasts of the United States, and imports, for the last three weeks; also monthly record for the last 12 months (figures in barrels):

	Week Ended		
	Feb. 11	Feb. 4	Jan. 28
Gulf Coast	277,000	249,000	386,000
Pacific Coast	42,000	61,000	78,000
Imports	166,000	134,000	166,000
Total	485,000	444,000	630,000

Daily Averages by Months

	Gulf	Pacific	Imports	Total
Jan., 1925	311,000	77,000	133,000	521,000
Dec., 1924	306,000	83,000	85,000	474,000
November	246,000	80,000	150,000	476,000
October	246,000	120,000	88,000	454,000
September	270,000	104,000	101,000	475,000
August	310,000	127,000	84,000	521,000
July	318,000	85,000	114,000	517,000
June	302,000	133,000	136,000	571,000
May	276,000	122,000	144,000	542,000
April	262,000	143,000	123,000	528,000
March	201,000	137,000	130,000	468,000
February	174,000	175,000	108,000	457,000

The above estimates are based on capacity of incoming oil-laden vessels.

ADVANCES EXPECTED IN HOUSTON MARKETS

HOUSTON, Tex., Feb. 14.—The advance of 25 cents in crude during the week is again reflected in an advance of 1 cent per gallon in lubricating stocks, including pale, pale filtered and red oil. Fuel oil is quoted at $1.70 to $1.80 with few sales made to miscellaneous buyers. Large users of fuel oil contracted for their needs in December. The general crude advance brings gas oil up ½ cent to 5 and 5½ cents.

The gasoline situation remains unchanged and no more reductions, either tank wagon prices or at service stations are anticipated. Rather advances are looked for by dealers, judging from the strength displayed by the various grades of crudes.

A. P. I. MAN AT DALLAS

The division of standardization of the American Petroleum Institute will immediately open an office at Dallas, Tex., in charge of C. A. Young.

REFINERY AND CRUDE PRICES

Quotations on Principal Refined Products and Crude Petroleum Markets in All the American Oil Fields

GASOLINE AND NAPHTHA

	Feb. 17		Feb. 10		Feb. 3	
OKLAHOMA (Group 3)—						
50-52 450 end point (Naphtha)	.12½	.12¾	.11¼	.11½	.10	.10½
56-58 450 end point	.13	.13¼	.11½	.12	.10½	.11
58-60 437 end point (U. S. Motor)	.13¼	.13½	.12	.12¼	.11	.11¼
60-62 400 end point	.14¾	.15	.13½	.13¾	.12½	.13
64-66 375 end point	.16	.16¼	.15	.15¼	.14½	.14¾
68-70 350 end point	.16¼	.16½	.15¼	.15½	.15	.15½
KANSAS—						
58-60 437 end point (U. S. Motor)	.13½	.13¾	.12¼	.12½	.11¼	.11½
NORTH TEXAS—						
48-52 450 end point (Naphtha)	.12¼	.12½	.11¼	.11½	.09¾	.10
50-52 440 end point (Naphtha)	.12½		.11½	.11¾	.09¾	.10
56-58 450 end point	.13	.13½	.11½	.12	.10¾	.11
58-60 437 end point (U. S. Motor)	.13½	.13¾	.12¼	.12½	.11¼	.11½
60-62 400 end point	.14¾	.15	.14	.14¼	.13	.13¼
64-66 390 end point	.16	.16¼	.14¾	.15	.14¼	.14½
64-66 375 end point	.16¼	.16½	.15¼	.15½	.14½	.15
68-70 360 end point	.16½	.16¾	.15½	.15¾	.15¼	.15½
NORTH LOUISIANA—						
56-58 450 end point	.12½	.13	.11¾	.12	.10¾	.11
58-60 437 end point (U. S. Motor)	.13¼	.13½	.12¼	.12½	.11¼	.11½
60-62 400 end point	.14½	.14¾	.13½	.13¾	.12½	.12¾
64-66 390 end point	.15¾	.16	.15	.15¼	.14	.14½
64-66 375 end point	.16¾	.17	.16	.16¼	.15	.15¼
ARKANSAS—						
58-60 450 end point	.14	.14¼	.12½	.12¾	.10¾	.11
58-60 437 end point (U. S. Motor)	.14¼	.14½	.12¾	.13	.11¼	.11½
64-66 375 end point	.17¼	.17½	.15½	.15¾	.14¾	.15
ROCKY MOUNTAIN STATES—						
*58-60 437 end point (U. S. Motor)	.16¼	.16½	.15¼	.15½	.14¼	.14½
PENNSYLVANIA—						
52 Naphtha	.14½		.13½		.12	
54 Naphtha	.14¾		.13¾		.12½	
56 Gasoline	.15¼		.14¼		.12¾	
58 Gasoline	.15¾		.14¾		.13½	
60 Gasoline	.16¼		.15¼		.14	
62 Gasoline	.16½		.15½		.14¾	
64 Gasoline	.17		.16		.15½	
66 Gasoline	.18½		.17		.17	
68-70 Gasoline	.19		.18¾		.18	
CALIFORNIA—						
54-56 437 end point (U. S. Motor) domestic	.11	.11½	.11	.11½	.09	.09½
CHICAGO DIST. (Based on Group 3)—						
50-52 450 end point (Naphtha)	.12½	.13	.11	.11¼	.09	.09½
56-58 450 end point	.12¾	.13	.11¼	.11½	.10¼	.10¾
58-60 437 end point (U. S. Motor)	.13¼	.13½	.12	.12¼	.11	.11¼
60-62 400 end point	.14½	.15	.13½	.13¾	.12½	.12¾
64-66 375 end point	.16¼	.16½	.15	.15¼	.14¼	.14½
68-70 360 end point	.17	.17¼	.15½	.15¾	.14¾	.15¼

*Colorado points.

NATURAL GASOLINE

	Feb. 17		Feb. 10		Feb. 3	
OKLAHOMA (Group 3)—						
Grade Double A, 80-87.9, 375 e.p., rec. 90%	.13	.13½	.11½	.11¾	.10½	
Grade A, 72-79.9, 375 end point, rec. 90%	.13	.13½	.11¾		.10½	
Grade Double B, 84-92, 375 e.p., rec. 95%	.12¼	.12½	.11	.11¼	.10	
Grade B, 76-83.9, 375 end point, rec. 85%	.12¼	.12½	.11	.11¼	.10	
Grade C, 80-90, 375 end point, rec. 78%	.11½	.11¾	.10¾		.09½	
NORTH TEXAS—						
Grade Double A, 80-87.9, 375 e.p., rec. 90%	.13	.13¼	.11¾		.10¼	.10½
Grade A, 72-79.9, 375 end point, rec. 90%	.13	.13¼	.11¾		.10¼	.10½
Grade Double B, 84-92, 375 e.p., rec. 85%	.12¼	.12¾	.11	.11¼	.09¾	.10
Grade B, 76-83.9, 375 end point, rec. 85%	.12¼	.12¾	.11	.11¼	.09¾	.10
Grade C, 80-90, 375 end point, rec. 78%	.11½	.11¾	.10½	.10¾	.09¼	.09½
NORTH LOUISIANA—						
Grade A, 72-79.9, 375 end point, rec. 90%	.15		.14		.10½	.10¾
Grade C, 76-82, 375 end point, rec. 85%	.13		.12		.09½	.09¾
CALIFORNIA—						
68-80 absorption, 360-390 end point	.13½	.14	.13½	.14	.11	.11½
78-84 compression, 350 end point	.13¾		.13¾		.11½	
CHICAGO DIST. (Based on Group 3)—						
Grade Double A, 80-87.9, 375 e.p., rec. 90%	.13	.13¼	.11¼	.11½	.10¼	.10½
Grade A, 72-79.9, 375 end point, rec. 90%	.13¼	.13½	.11½	.11¾	.10½	.10¾
Grade Double B, 84-92, 375 e.p., rec. 85%	.12¼	.12½	.10¾	.11	.09¾	.10
Grade B, 76-83.9, 375 end point, rec. 85%	.12½	.12¾	.11	.11¼	.10	.10¼
Grade C, 80-90, 375 end point, rec. 78%	.11¾	.12	.10½	.10¾	.09¼	.09½

MOTOR NATURAL GASOLINE (BLEND)

	Feb. 17		Feb. 10		Feb. 3	
OKLAHOMA (Group 3)—						
60-62 450 end point	.12¾	.13	.11¾	.12	.10½	
64-66 437 end point	.13		.11¾	.12	.10½	
68-70 430-435 end point	.13		.11¾	.12	.10½	
NORTH TEXAS—						
58-62 440 end point	.12¾	.13	.12		.10½	
58-60 450 end point	.13		.12		.10½	
PENNSYLVANIA—						
*60-62	.15½		.14¾		.13½	
*64-68	.15½		.14¾		.13½	
*66-68	.15¾		.14¾		.13½	
*68-70	.15¾		.14¾		.13½	
CHICAGO DIST. (Based on Group 3)—						
60-62 450 end point	.12¾	.13	.11½	.11¾	.10	.10¼
64-66 450 end point	.12¾	.13	.11½	.11¾	.10	.10¼
68-70 437 end point	.12¾	.13¼	.11¾	.12	.10¼	.10½

*At Sistersville, W. Va.

BURNING OIL

	Feb. 17		Feb. 10		Feb. 3	
KANSAS—						
41-43 water white Kerosene	.05½	.05¾	.04¾	.04⅞	.04½	.04⅝
NORTH LOUISIANA—						
41-43 prime white Kerosene	.05	.05¼	.05		.05	
42-44 water white Kerosene	.05¼	.05½	.05¼		.05¼	
OKLAHOMA (Group 3)—						
41-43 water white Kerosene	.04¾	.05¼	.04½	.04¾	.04⅜	.04⅝
42-44 water white Kerosene	.05¼	.05½	.04⅝	.04¾	.04½	.04⅝
40-41 prime white Kerosene	.04¾	.04⅞	.04⅝	.04¾	.04½	.04⅝
ROCKY MOUNTAIN STATES—						
*40-42 water white Kerosene	.07¾	.08	.07½	.07¾	.07½	.07⅞
NORTH TEXAS—						
41-43 water white Kerosene	.04¾	.05	.04¾	.04⅝	.04⅜	.04⅝
40-42 prime white Kerosene	.04½	.04¾	.04½	.04¼	.04⅜	.04⅝
41-43 prime white Kerosene	.04½	.04¾	.04½	.04½	.04⅜	.04⅝
42-44 water white Kerosene	.05	.05¼	.04⅝	.04¾	.04⅜	.04⅝
ARKANSAS—						
41-43 water white Kerosene	.05¾	.06	.05	.05¼	.05	.05⅛
42-44 water white Kerosene	.06	.06¼	.05¼	.05½	.05¼	.05⅝
PENNSYLVANIA—						
43 Kerosene prime white	.07½		.07¼		.07¼	
45 Kerosene water white	.07¾		.07½		.07½	
46 Kerosene water white	.08¼		.08¼		.08	
47 Kerosene water white	.08¾		.08½		.08½	
34 Neutral	.08¾		.08¾		.08½	
34 Sundebloomed Neutral	.10		.10		.09½	
36 Miners' Neutral	.08		.08		.08	
300 Mineral Seal	.08		.08		.08	
CALIFORNIA—						
40-42 water white (high burning test)	.07½	.08	.07½	.08	.07½	.08
Engine distillate, 43-45 445 end point	.08½	.09	.08¼	.09	.06	.06⅝
Engine distillate, 42-44 480 end point	.07¾	.08	.07¾	.08	.05½	.05⅞
CHICAGO DIST. (Based on Group 3)—						
41-43 water white Kerosene	.04⅞	.05	.04½	.04¾	.04¼	.04⅝
42-44 water white Kerosene	.05	.05¼	.04¾	.05	.04¾	.05

*Colorado points.

FUEL OILS

	Feb. 17		Feb. 10		Feb. 3	
KANSAS—						
24-26 Fuel Oil	1.45	1.50	1.50	1.55	1.45	1.50
32-36 Gas Oil	.03¾	.03⅞	.03¾	.03⅞	.03⅜	.03⅝
38-40 Distillate	.04	.04¼	.04⅛	.04¼	.04⅛	.04⅜
OKLAHOMA (Group 3)—						
22-26 Fuel Oil (sellers' cars)	1.27½	1.32½	1.30	1.35	1.32½	1.35
24-26 Fuel Oil (buyers' cars)	1.27½	1.32½	1.30	1.35	1.30	1.35
24-26 Fuel Oil (sellers' cars)	1.30	1.35	1.32½	1.35	1.35	1.37½
28-30 Fuel Oil (sellers' cars)	1.40	1.45	1.40	1.45	1.40	1.45
32-36 Gas Oil	.03¾	.03⅞	.03¾	.03⅞	.03⅜	.03⅝
36-38 Distillate	.03¾	.03⅞	.03¾	.03⅞	.03⅜	.03⅝
38-40 Straw distillate	.04		.04	.04⅛	.04	.04⅜
NORTH TEXAS—						
24-26 Fuel Oil (sellers' cars)	1.40	1.45	1.40	1.50	1.40	1.45
26-30 Fuel Oil	1.45	1.50	1.50	1.55	1.50	1.55
32-36 Gas Oil	.03¾	.03⅞	.03¾	.03⅞	.03⅜	.04
36-38 Distillate	.03¾	.03⅞	.03¾	.03⅞	.03⅜	.03⅝
38-40 Straw distillate	.04		.04	.04⅛	.04	.04⅜
NORTH LOUISIANA—						
18-20 Fuel Oil	1.30	1.35	1.40	1.45	1.30	1.35
32-36 Gas Oil	.04		.04	.04¼	.03¾	.03⅝
ARKANSAS—						
38-40 Distillate	.04¼		.04¼	.04½	.04¼	.04⅜
32-36 Gas Oil	.04	.04¼	.04	.04¼	.04	.04⅜
22-26 Refinery Fuel Oil	1.30	1.35	1.30	1.35	1.30	1.35
GULF COAST (South Texas)—						
Gas Oil	.05	.05½	.04½	.05	.04½	.05
Fuel Oil	1.70	1.80	1.65		1.65	
PENNSYLVANIA—						
30-34 Fuel Oil	.06¼		.06¼		.06¼	
36-40 Fuel Oil	.07		.07		.07	
CALIFORNIA—						
33-36 Distillate	.04¾	.05	.04¾	.05	.04	.04½
27-33 Distillate	.04½	.04¾	.04½	.04¾	.03¾	.04
15-20 Fuel Oil (at tide water)	1.60	1.65	1.60	1.65	1.40	
CHICAGO DIST. (Based on Group 3)—						
24-26 Fuel Oil (sellers' cars, Group 3)	1.30	1.35	1.30	1.35	1.30	1.35
22-24 (El Dorado)	1.30	1.35	1.30	1.35	1.30	1.35
18-20 (Smackover)	1.25	1.30	1.25	1.30	1.25	1.30
32-36 Gas Oil	.03¾	.04	.02⅝	.02⅞	.03⅜	.04
36-38 Distillate	.03¾	.03⅞	.03¾	.04	.04	.04⅜
38-40 Straw distillate	.03⅞	.04	.03⅞	.04⅛	.04⅛	.04¼

LUBRICATING OILS AND WAX

	Feb. 17		Feb. 10		Feb. 3	
OKLAHOMA (Group 3)—						
Neutrals:						
70-80 vis., 2½ color, 20-25 cold test	.06	.06½	.06	.06½	.06	.06½
100 vis., 2 color, 20-25 cold test	.07½	.08	.07½	.08	.07½	.08
100 vis., 3 color, 20-25 cold test	.07	.07½	.07	.07½	.07	.07½
150 vis., 3 color, 20-25 cold test	.08½	.09	.08½	.09	.08½	.09
150 vis., 4 color, 20-25 cold test	.08¼	.08¾	.08¼	.08¾	.08¼	.08⅝
180 vis., 4 color, 23-28 cold test	.09	.09½	.09	.09½	.09	.09½
180 vis., 3 color, 23-28 cold test	.09¼	.09¾	.09¼	.09¾	.09¼	.09⅝
200 vis., 3 color, 23-28 cold test	.10¾	.11¼	.10¾	.11¼	.10¾	.11¼
200 vis., 4 color, 23-28 cold test	.10½	.11	.10½	.11	.10½	.11
220 vis., 3 color, 25-30 cold test	.13	.13½	.13	.13½	.13	.13⅜
220 vis., 4 color, 25-30 cold test	.12½	.13	.12½	.13	.12½	.13
240 vis., 3 color, 25-30 cold test	.14½	.15	.14½	.15	.14½	.15
240 vis., 4 color, 25-30 cold test	.14	.14½	.14	.14½	.14	.14⅜
280 vis., 3 color, 25-30 cold test	.17½	.18	.17½	.18	.17½	.18
280 vis., 4 color, 25-30 cold test	.16½	.17	.16½	.17	.16½	.17
Red Neutrals:						
180 vis., 5 color, 23-28 cold test	.08¾	.09¼	.08¾	.09¼	.08¾	.09¼
180 vis., 6 color, 23-28 cold test	.13½	.14	.13½	.14	.13½	.14
200 vis., 5 color, 23-28 cold test	.10¼	.10¾	.10¼	.10¾	.10¼	.10⅝
200 vis., 6 color, 23-28 cold test	.14½	.15	.14½	.15	.14½	.15
220 vis., 5 color, 25-30 cold test	.12	.12½	.12	.12½	.12	.12⅜
220 vis., 6 color, 25-30 cold test	.16¼	.16¾	.16¼	.16¾	.16¼	.16⅛
240 vis., 5 color, 25-30 cold test	.13½	.14	.13½	.14	.13½	.14
240 vis., 6 color, 25-30 cold test	.17¼	.17¾	.17¼	.17¾	.17¼	.17⅛
280 vis., 5 color, 25-30 cold test	.15½	.16	.15½	.16	.15½	.16

REFINERY AND CRUDE PRICES

Quotations on Principal Refined Products and Crude Petroleum Markets in All the American Oil Fields

Cylinder Stocks—						
180-200 vis., S. R. green, 40-45 cold test	.10½	.11	.08½	.09	.08½	.09
180-200 vis., S. R. green, 40-45 cold test	.10	.10½	.08½	.09	.08½	.09
170-190 dark green, 40-45 cold test	.08	.09	.06½	.07	.06½	.07
600, E filtered	.20½	.21½	.20½	.21½	.20½	.21½
190-200 vis. @ 210 "D" Bright Stock	.35		.35		.35	
200-210 vis. @ 210 "E" Bright Stock	.30		.30		.30	
150 vis. @ 210 "D" Bright Stock	.31		.31		.31	
150 vis. @ 210 "E" Bright Stock	.27		.27		.27	
Waxes:						
124-126 White Crude Scale Wax	.05¼	.05⅜	.05¼	.05⅜	.05¼	.05⅜
PENNSYLVANIA—						
150, 3 color	.22		.22		.22	
180, 3 color	.24½		.24½		.24½	
200, 3 color	.26		.26		.26	
220, 3 color	.28½		.28½		.28½	
600, steam refined	.23½		.23¼		.23¼	
635, steam refined	.28½		.28½		.28	
650, steam refined	.31		.38½		.38½	
600, Pennsylvania flash	.35		.35		.35	
630, Pennsylvania flash	.40		.39½		.39½	
*350, E filtered	.24		.24		.24	
*600, E filtered	.27½		.27½		.27	
600, E filtered	.26½		.26½		.26	
600, D filtered	.32½		.32½		.32½	
550, E filtered	.23		.23		.23	
550, D filtered	.27		.27		.27	
Pennsylvania Bright Stock	.40½		.40½		.41	
122-124 White Crude Scale Wax	.05⅝		.05⅝		.05⅝	
†122-124 White Crude Scale Wax	.05⅞		.05⅞		.05⅞	

*At Warren, Pa. †At New York City.

GULF COAST (South Texas)—						
Zero Black	.07	.08	.06½	.07	.06½	.07
No. 2 color, 100 vis., pale oil	.10½	.11½	.09½	.10½	.08½	.09½
No. 2 color, 150 vis., pale oil	.12	.13	.11	.12	.10	.11
No. 3 color, 200 vis., pale oil	.15	.16	.14	.15	.13	.14
No. 3 color, 300 vis., pale oil	.17	.18	.16	.17	.15	.16
No. 3½ color, 500 vis., pale oil	.19	.20	.18	.19	.17	.18
No. 3½ color ,750 vis., pale oil	.24½	.25½	.23½	.24½	.22½	.23½
No. 4½ color, 1200 vis., pale oil	.27½	.28½	.26½	.27½	.25½	.26½
No. 4½ color, 2000 vis., pale oil	.31	.32	.30	.31	.29	.30
No. 2 plus color, 150 vis., pale filtered	.23½		.22½		.20½	
No. 2 plus color, 200 vis., pale filtered	.25		.24		.22	
No. 2½ minus color, 300 vis., pale filtered	.28½		.27½		.25½	
No. 2½ color, 500 vis., pale filtered	.32½		.31½		.29½	
No. 2½ color, 800 vis., filtered	.42½		.41½		.39½	
No. 5 to 6 color, 200 vis., red oil	.13½	.14½	.12½	.13½	.11½	.12½
No. 5 to 6 color, 300 vis., red oil	.15½	.16½	.14½	.15½	.13½	.14½
No. 5 to 6 color, 500 vis., red oil	.17½	.18½	.16½	.17½	.15½	.16½
No. 5 to 6 color, 750 vis., red oil	.22½	.23½	.21½	.22½	.20½	.21½
CALIFORNIA—						
200 vis., 2½-3 color	.14½	.15½	.14½	.15½	.14½	.15½
300 vis., 2 -4 color	.16	.17	.16	.17	.16	.17
350 vis., 3½-4 color	.17½	.18½	.17½	.18½	.17½	.18½
400 vis., 4 -4½ color	.19	.20	.19	.20	.19	.20
Red Neutrals:						
200 vis., 4½-5 color	.13	.14	.13	.14	.13	.14
300 vis., 5 -6 color	.14	.15	.14	.15	.14	.15
400 vis., 5 -6 color	.16	.17	.16	.17	.16	.17
500 vis., 6 -6½ color	.17	.18	.17	.18	.17	.18
600 vis., 6½ plus color	.18	.19	.18	.19	.18	.19

Note: Bright stocks are not manufactured commercially on the Pacific Coast.

NEW YORK DOMESTIC MARKET

Bayonne Refinery Prices:	Feb. 17	Feb. 10	Feb. 3
U. S. Motor Gasoline, 58-60 437	.17	.17	.14
*Bunker Oil, 14-16 Be.	1.80	1.80	1.80
*Diesel Oil, 28-30 Be.	2.70	2.70	2.70
Furnace Oil, New York City	.10	.10	.10
Gas Oil, 32-36 Be.	.06¾	.06¾	.06¾
41-43 Kerosene prime white	.09	.09	.09

*Lighterage, 6.5c a barrel extra.

NEW YORK EXPORT PRICES

	Feb. 17	Feb. 10	Feb. 3
Motor Gasoline:			
58-60 Be. gravity, in cases	.30.15	.29.15	.29.15
U. S. Navy, in bulk	.16	.15	.15
Naphtha:			
60° F., 59-61 Be. gravity, in bulk	.18¾	.17¾	.17¾
60° F., 63-66 Be. gravity, in bulk	.20	.19	.19
60° F., 66-68 Be. gravity, in bulk	.21½	.20½	.20½
Kerosene:			
Standard white, 40-42 Be. grav., in bulk	.06½	.06½	.06½
Standard white, 40-42 Be. grav., in barrels	.13½	.13½	.13½
Standard white, 40-42 Be. grav., in cases	.16.9	.16.9	.16.9
Water white, 42-44 Be. grav., in bulk	.07½	.07½	.07½
Water white, 42-44 Be. grav., in barrels	.14½	.14½	.14½
Water white, 42-44 Be. grav., in cases	.17.9	.17.9	.17.9
†Lubricating Oils:			
Cylinder Stock, extra light filtered, 600, in barrels	.46½	.46½	.46½
Cylinder Stock, light filtered, 600, barrels	.40½	.40½	.40½
No. 1 white neutral, .878 spec. grav.	.43	.43	.43
No. 1 Summer Black, .895 spec. grav.	.18	.18	.18
No. 5 Bright Stock, .897 spec. grav.	.50½	.50½	.50½
Special "A" red oil, .897 spec. grav., 170 vis.	.21	.21	.21
No. 2 red oil, .903 spec. grav., 212 vis.	.22	.22	.22
No. 1 red oil, .905 spec. grav., 265 vis.	.23	.23	.23
Polar red oil, .906 spec. grav., 295 vis.	.25	.25	.25
Pale oil, "25", .890 spec. grav.	.20½	.20½	.20½
Pale oil, "28", .892 spec. grav.	.16	.16	.16
Paraffin Wax:			
120-122 a.m.p., per lb.	.06¼	.06¼	.06⅛
125-127 a.m.p., per lb.	.06⅜	.06⅜	.06¼
130-132 a.m.p., per lb.	.06⅝	.06⅝	.06⅝
135-137 a.m.p., per lb.	.07½	.07½	.07½

†All lube prices in barrels.

LOS ANGELES EXPORT PRICES

	Feb. 17		Feb. 10		Feb. 3	
Kerosene water white	.05	.05½	.05	.05½	.05	.05½
U. S. Motor gasoline, 54-56, 437 end point	.10½	.11	.10½	.11	.08½	.09

CRUDE OIL PRICES

(Crude Price Changes on Page 114)

Arkansas and North Louisiana

Caddo, 38° and above	$2.05
35° to 37.9°	1.95
32° to 34.9°	1.85
Below 32°	1.70
Homer, 35° and above	1.80
32° to 34.9°	1.70
31° to 32.9°	1.60
Below 31°	1.45
Haynesville, 33° and above	1.70
Below 33°	1.60
El Dorado, 33° and above	1.70
Below 33°	1.60
Bull Bayou, 38° and above	1.85
35° to 37.9°	1.70
32° to 34.9°	1.55
Cotton Valley	1.40
De Soto	1.90
Crichton	1.70
Bellevue	2.00
*Stephens, Ark:	
Below 26°	1.40
26° and above	1.60
Smackover:	
Below 25°	1.30
25° to 25°9°	1.40
26° to 26.9°	1.50
27° to 27.9°	1.55
28° and above	1.60

*Posted by Atlantic Oil Producing Co.

Wyoming and Montana

Rock Creek (Wyo.)	1.65
Salt Creek	1.55
Big Muddy	1.55
Mule Creek	1.25
Grass Creek (light)	2.00
Elk Basin	2.00
Lance Creek	1.95
Osage	1.95
Cat Creek (Mont.)	2.00
Sunburst (Mont.)	1.20
Lost Soldier	1.24
Greybull and Torchlight	1.45
Hamilton Dome	1.05
Hogback, N. Mex.	2.05

Lost Soldier and Lander based on contracts covering entire production of fields.

Oklahoma, Kansas, North and Central Texas

Prairie Oil & Gas Co. and other major purchasing companies, except as noted:

Below 30°	1.35
30° to 32.9°	1.55
33° to 35.9°	1.80
36° to 38.9°	2.00
39° to 41.9°	2.25
42° and above	2.35
Sinclair Crude Oil Purchasing Co.—	
39° to 41.5°	2.25
41.6° and above	2.35
Magnolia Petroleum Co.:	
Below 28°	1.00
28° to 30.9°	1.35
*31° to 32.9°	1.55
Corsicana light	2.00
Corsicana heavy	1.00
Mexia and Wortham	2.00

*33° gravity and above, same as Prairie.

Humble Oil & Refining Co.

Powell, Currie, Richland	2.00
Mexia and Wortham	2.00
Moran crude:	
Below 30° gravity	1.35
30° to 32.9°	1.55
33° to 35.9°	1.80
36° and above	2.00

Ranger and North Texas, same as Prairie.

Gulf Coast

Grade "A"	2.00
Grade "B"	1.75
Luling (based on contracts) 90c and	1.15
Laredo (Magnolia Petroleum Co.)	.85
Rockdale-Minerva (Milam County)	1.25
Calliham (Live Oak-McMullen)	1.15
*High Island	.85

*Posted by Sun Co.

***Somerset**

Below 30°	1.25
30° to 32.9°	1.35
33° to 35.9°	1.80
36° to 38.9°	1.95
39° to 41.9°	2.10
42° and above	2.35

Posted by Grayburg Oil Co.

California

14° to 19.9°	$1.25
20° to 20.9°	1.27
21° to 21.9°	1.30
22° to 22.9°	1.33
23° to 23.9°	1.36
24° to 24.9°	1.40
25° to 25.9°	1.44
26° to 26.9°	1.48
27° to 27.9°	1.52
28° to 28.9°	1.56
29° to 29.9°	1.60
30° to 30.9°	1.64
31° to 31.9°	1.68
32° to 32.9°	1.72
33° to 33.9°	1.76
34° to 34.9°	1.80
35° and above	1.85
Rosecrans-Athens Field, only:	
Below 35.9° gravity, same as other fields.	
36° to 36.9°	1.92
37° to 37.9°	2.00
38° to 38.9°	2.08
39° to 39.9°	2.16
40° to 40.9°	2.24
41° to 41.9°	2.32
42° and above	2.40

Eastern States

Penna Grade Oil in New York Transit Lines	3.85
Bradford District Oil in National Transit Lines	3.85
Penna Grade Oil in National Transit Lines	3.75
Penna Grade Oil in Southwest Pa. Pipe Lines	3.75
Penna Grade Oil in Eureka Pipe Line Lines	3.75
Penna Grade Oil in Buckeye Pipe Line Lines	3.75
Cabell Grade Oil in Eureka Pipe Line Lines	2.20
Corning Grade Oil in Buckeye Pipe Line Lines	2.25
Somerset Medium Oil in Cumberland Pipe Line Lines	2.30
Somerset Light Oil in Cumberland pipe Line Lines	2.45
Ragland Grade Oil in Cumberland Pipe Line Lines	1.30
Lima	2.33
Wooster	2.25
Illinois	2.12
Indiana	2.13
Princeton	2.12
Plymouth	1.65
Waterloo	1.00
†Oil Springs, Canada	3.05
†Petrolia, Canada	2.98
*Western Kentucky, 36° and above	2.05
*Western Kentucky, 33° to 35.9°	1.95
*Western Kentucky 32.9° and below	1.85
Cumberland, Warren and Monroe Counties (Kentucky), (Paragon Development Co.)	2.95

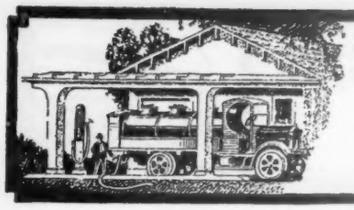
†Plus Government bounty of 26½c.

*Prices for Warren, Allen, Hancock, and Ohio Counties by Indian Refining Co. Prices for Warren and Simpson Counties by Paragon Development Co., same as Indian Refining Co.

Mexican Crude

*Tuxpam (f.o.b. Mexican ports)	$1.35
†Panuco (f.o.b. Mexican ports)	1.25
Tuxpam (New York)	1.99
Panuco (New York)	1.76

*Plus 33.00c tax. †Plus 20.00c tax.



TANK WAGON MARKETS

Tank wagon quotations for gasoline and kerosene in United States as furnished by the larger marketing concerns, Feb. 17.

ALL TANK WAGON AND SERVICE STATION QUOTATIONS INCLUDE TAXES

STANDARD OIL CO. (INDIANA)

Main Service Station Price

	Gasoline			Kero.
	Tank wagon	Service station	Inclds tax of	Tank wagon
Chicago Dist.—				
†100 gals. or more	18.0	21.0	...	12.0

Tank wagon prices on April 19, 1922; g. up 1½c; May 8, g. up 1c; June 27, both up 1c; July 19, g. down 2c, k. down 1c; Oct. 10, g. down 2c; Oct. 21, g. down 1c; Feb. 5, 1923, g. up 1c; Feb. 10, g. up 1c; Aug. 14, g. down 6.6c; Oct. 4, k. down 1½c; Nov. 10, g. down 1.4c; Dec. 29, g. up 2c; Jan. 12, 1924, g. up 2c, k. up 1c; Feb. 5, g. up 2c, k. 1c; July 18, g. down 1c; July 30, g. and k. down 1c; Sept. 12, g. down 2c; Jan. 23, 1925, g. up 1c; Jan. 26, g. up 1c; Jan. 31, g. up 1c; Feb. 12, g. up 2c, k. up 1c.

Decatur, Ill.	18.2	20.2	...	12.5
East St. Louis	17.1	19.35	...	11.6
Joliet	18.4	20.4	...	12.7
Peoria	18.2	20.2	...	12.5
Quincy	18.2	20.2	...	12.3
Davenport, Ia.	18.5	20.5	...	12.9
Des Moines	18.5	20.5	...	12.9
Keokuk	18.5	20.5	...	12.9
Sioux City	18.1	20.1	...	12.5
Duluth, Minn.	19.5	21.5	...	13.6
Minneapolis	19.2	21.2	...	13.6
La Crosse, Wis.	19.2	21.2	...	13.4
Milwaukee	18.1	20.1	...	12.3
Madison	18.5	20.3	...	12.5
Detroit, Mich.	18.8	20.8	2.0	13.2
Grand Rapids	20.7	22.7	2.0	13.1
Saginaw	20.9	22.9	2.0	13.3
Evansville, Ind.	20.0	22.0	2.0	12.5
Fort Wayne	20.4	22.4	2.0	12.9
Indianapolis	20.3	22.3	2.0	12.7
South Bend	20.4	22.4	2.0	12.9
Fargo, N. D.	20.9	22.9	1.0	15.6
Huron, S. D.	22.0	24.0	2.0	14.1
Sioux Falls	21.5	23.5	2.0	13.6
*Kansas City, Mo.	20.9	22.9	3.0	11.3
*Springfield	20.8	22.8	3.0	12.2
*St. Louis	19.6	21.9	2.5	12.0
*St. Joseph	20.0	22.0	2.5	11.9
Wichita, Kans.	17.8	19.8	...	10.8
Bartlesville, Okla.	19.4	21.4	...	10.9

*State tax is 2c. Remainder is city tax.
†Tank wagon price on less than 100 gallons, 19.0.

ATLANTIC COAST DISTRICT

Standard Oil Co. (New Jersey)

	Gasoline			Kero.
	Tank wagon	Service station	Inclds tax of	Tank wagon
Newark, N. J.	19.0	21.0	...	13.0
Atlantic City	19.0	....	...	13.0
Annapolis, Md.	22.0	24.0	2.0	12.0
Baltimore	21.0	23.0	2.0	11.0
Cumberland	22.0	24.0	2.0	12.5
Washington, D. C.	21.0	23.0	2.0	12.5
Norfolk, Va.	23.0	25.0	3.0	13.5
Petersburg	23.0	....	3.0	13.5
Danville	23.0	....	3.0	13.0
Richmond	22.0	24.0	3.0	13.5
Roanoke	23.0	25.0	3.0	13.5
Keyser, W. Va.	21.0	....	2.0	13.5
Charleston	20.0	22.0	2.0	13.5
Parkersburg	20.0	22.0	2.0	13.5
Wheeling	20.0	22.0	2.0	13.5
Charlotte, N. C.	23.0	25.0	3.0	13.5
Hickory	23.0	....	3.0	13.5
Mt. Airy	23.0	....	3.0	13.5
Salisbury	23.0	....	3.0	13.5
Charleston, S. C.	23.0	25.0	3.0	14.0
Columbia	23.0	25.0	3.0	14.0

PENNSYLVANIA-DELAWARE AND PART NEW ENGLAND

Atlantic Refining Co.

	Gasoline			Kero.
	Tank wagon	Service station	Inclds tax of	Tank wagon
*Pittsburgh, Pa.	19.0	24.0	...	14.0
*Philadelphia	19.0	24.0	...	14.0
*Scranton	19.0	24.0	...	14.0
*Allentown	19.0	24.0	...	14.0
*Altoona	19.0	24.0	...	14.0
*Erie	19.0	24.0	...	14.0
Dover, Del.	21.0	24.0	2.0	14.0
Wilmington	21.0	24.0	2.0	14.0
Springf'ld, Mass.	21.0	25.0	...	13.0
Worcester, Mass.	21.0	25.0	...	13.0
Boston	21.0	25.0	...	11.0
Providence, R. I.	21.0	25.0	...	13.0
Hartford, Conn.	22.0	26.0	1.0	12.0
New Haven, Con.	22.0	26.0	1.0	13.0

*Pennsylvania tax of 2 cents is collected by the dealer and paid by him direct to the State.

CENTRAL SOUTH DISTRICT

Standard Oil Co. (Louisiana)

	Gasoline			Kero.
	Tank wagon	Service station	Inclds tax of	Tank wagon
New Orleans, La.	20.5	22.5	2.0	11.0
Alexandria	20.5	22.5	2.0	13.0
Baton Rouge	19.0	21.0	2.0	11.5
Lake Charles	20.5	22.5	2.0	13.0
Shreveport	20.5	22.5	2.0	13.0
Memphis, Tenn.	20.0	22.0	2.0	14.0
Chattanooga	21.5	23.5	2.0	14.5
Knoxville	22.5	24.5	2.0	15.0
Nashville	21.5	23.5	2.0	13.5
Bristol	23.0	25.0	2.0	13.5
Little Rock, Ark.	23.0	25.0	4.0	11.0

SOUTHERN DISTRICT

Standard Oil Co. (Kentucky)

	Gasoline			Kero.
	Tank wagon	Service station	Inclds tax of	Tank wagon
Atlanta, Ga.	23.0	26.0	3.0	13.0
Augusta	23.0	26.0	3.0	13.5
Macon	23.0	26.0	3.0	14.5
Savannah	21.0	24.0	3.0	13.0
Birmingham, Ala.	21.0	24.0	2.0	14.5
Mobile	20.0	23.0	2.0	12.5
*Montgomery	22.0	25.0	3.0	15.5
Clarksdale, Miss.	21.0	24.0	3.0	12.0
Jackson	21.0	24.0	3.0	10.0
Natchez	20.5	23.5	3.0	11.5
Vicksburg	20.5	23.5	3.0	11.5
Jacksonville, Fla.	21.0	24.0	3.0	13.0
Miami	23.0	26.0	3.0	14.5
Pensacola	21.0	24.0	3.0	13.5
Tampa	21.0	24.0	3.0	13.0
Lexington, Ky.	21.0	24.0	3.0	14.0
Covington	18.0	21.0	3.0	14.0
Louisville	21.0	23.0	3.0	12.0

*In addition to the State tax of 2 cents on gasoline. Montgomery has city tax of 1 cent on gasoline and ½ cent on kerosenes.

SOUTHWESTERN DISTRICT

Magnolia Petroleum Co.

	Gasoline			Kero.
	Tank wagon	Service station	Inclds tax of	Tank wagon
Dallas, Texas	17.0	21.0	1.0	11.0
Fort Worth	17.0	21.0	1.0	11.0
Houston	17.0	21.0	1.0	11.0
San Antonio	17.0	20.0	1.0	11.0
El Paso	19.0	22.0	1.0	12.0
Muskogee, Okla.	19.0	22.0	2.5	12.0
Oklahoma City	19.0	22.0	2.5	12.0
Tulsa	19.0	22.0	2.5	11.0
Ft. Smith, Ark.	21.5	24.5	4.0	12.0
Little Rock	23.0	26.0	4.0	11.0
*Texarkana	18.0	21.0	1.0	11.0

*Does not include 1c additional tax.

ROCKY MOUNTAIN DISTRICT

Continental Oil Co.

	Gasoline			Kero.
	Tank wagon	Service station	Inclds tax of	Tank wagon
Casper, Wyo.	20.0	22.0	1.0	12.0
Cheyenne	21.5	23.5	1.0	13.5
Albuquerque, N. M.	22.5	25.5	1.0	15.5
Salt Lake, Utah	23.0	25.0	2.0	17.0
Denver, Colo.	21.0	23.0	2.0	13.5
Pueblo	21.0	23.0	2.0	13.5
Butte, Mont.	22.0	24.0	2.0	15.0
Helena	24.0	26.0	2.0	16.0
Boise, Idaho	23.5	25.5	2.0	19.0

NEW YORK AND PART OF NEW ENGLAND DISTRICT

Standard Oil Co. (New York)

	Gasoline			Kero.
	Tank wagon	Service station	Inclds tax of	Tank wagon
Albany, N. Y.	21.0	....	...	13.0
*New York	21.0	....	...	13.0
Buffalo	21.0	....	...	12.0
Rochester	21.0	....	...	13.0
Syracuse	21.0	....	...	12.0
Boston, Mass.	21.0	....	...	13.0
Providence, R. I.	21.0	....	...	13.0
Augusta, Me.	22.0	....	1.0	13.0
Manchester, N. H.	23.0	....	2.0	13.0
Burlington, Vt.	22.0	....	1.0	13.0

*Price in steel barrels.
Note: Standard Oil Co. of New York does not generally quote service station price in its territory. In most cases the service station price is 2 or 3 cents higher than tank wagon price.

PACIFIC COAST DISTRICT

Standard Oil Co. of California

	Gasoline			Kero.
	Tank wagon	Service station	Inclds tax of	Tank wagon
San Francisco	17.0	20.0	2.0	15.5
Los Angeles	16.5	18.5	2.0	15.5
Fresno	17.5	20.5	2.0	19.5
Reno, Nev.	20.5	23.5	2.0	19.0
Portland, Ore.	18.0	21.0	3.0	16.5
Seattle, Wash.	17.0	20.0	2.0	16.5
Tacoma	17.0	20.0	2.0	16.5
Spokane	21.0	24.0	3.0	20.5
Phoenix, Ariz.	23.0	26.0	3.0	21.5

OHIO

Standard Oil Co. (Ohio)

	Gasoline			Kero.
	Tank wagon	Service station	Inclds tax of	Tank wagon
All Ohio points	17.0	19.0	...	15.0

NEBRASKA

Standard Oil Co. (Nebraska)

	Gasoline			Kero.
	Tank wagon	Service station	Inclds tax of	Tank wagon
Omaha	14.0	16.0	...	11.50
Crawford	17.0	....	...	12.25
McCook	17.75	19.75	...	13.00
Norfolk	16.75	18.75	...	12.00
North Platte	17.75	19.75	...	13.75
Scotts Bluff	17.25	19.25	...	13.25

TANK WAGON CHANGES

February 11.—Magnolia Petroleum Co. advanced kerosene tank wagon price 1 cent at Texarkana, Tex.

February 13.—The Standard Oil Co. of Indiana advanced gasoline tank wagon and service station prices 2 cents and kerosene tank wagon prices 1 cent throughout its entire territory. The Magnolia Petroleum Co., advanced both gasoline and kerosene tank wagon and service station prices 1 cent in Oklahoma.

February 16.—The Continental Oil Co. advanced gasoline tank wagon and service station prices 2 cents in Wyoming and Colorado and 1 cent in Montana.

February 18.—Magnolia Petroleum Co. advanced gasoline tank wagon and service station prices 2 cents in Texas.

EXPERIMENTAL PLANT DESTROYED BY FIRE

The experimental refining plant located at Perry, Okla, and belonging to the Braden Co., of Tulsa, was destroyed by fire Saturday night with a loss estimated at $200,000. The fire is thought to have been due to the bursting of a tank containing 25,000 gallons of gasoline. The plant was started by the late Glen T. Braden and cost $250,000.

The Braden Co. also suffered a $2,500 loss in the fire which destroyed the building in which the Kansas City auto show was being held last week.

CRUDE PRICE CHANGES

February 12—Prairie Oil & Gas Co. and Sinclair Crude Oil Purchasing Co. advanced Mid-Continent crude prices from 20 cents to 35 cents, making the top price $2.35. The Humble Oil & Refining Co. advanced Gulf Coast crudes 25 cents, making Grade A $2.00 and Grade B $1.75. Humble also advanced Mexia, Wortham, Powell, Currie and Richland crudes 20 cents to $2.00; and raised Ranger and North Texas crudes from 20 cents to 40 cents, meeting the Prairie price on all grades below 36 degrees while 36 to 38.9 degrees gravity is $2.00, 5 cents above Prairie, and 39 to 41.9 degrees is $2.25, 15 cents above Prairie and 42 and above is the same at $2.35. Humble also advanced Moran crude 20 cents to 30 cents.

February 13.—Joseph Seep Purchasing Agency advanced Cabell, Somerset medium and Somerset light 25 cents; Corning 30 cents; and Ragland 10 cents. The Ohio Oil Co. advanced Lima, Indiana, Illinois, Princeton and Plymouth 25 cents; and Wooster crude 30 cents. Imperial Oil, Ltd., advanced Canadian crudes 25 cents. The Magnolia Petroleum Co. advanced Corsicana light, Mexia and Wortham crudes 20 cents and met the Prairie schedule in Oklahoma, Kansas and Texas. The Ohio Oil Co. advanced Big Muddy, Rock Creek and Mule Creek 25 cents; Elk Basin, Grass Creek light and Lance Creek 35 cents, and Sunburst, Mont., 8 cents. The Midwest Refining Co. advanced Salt Creek, Rock Creek, Mule Creek and Big Muddy 25 cents; Grass Creek, Elk Basin, Osage, Cat Creek and Hogback, N. Mex., 35 cents. The Paragon Development Co. advanced Cumberland, Monroe and Barren Counties, Kentucky, crude 75 cents. The Grayburg Oil Co. posted a new gravity schedule for Somerset, Texas, crude, prices being made same as Prairie for 33 and above while below 30 is $1.25 and 30 to 32.9 is $1.35.

February 14.—All grades of Pennsylvania crude were raised 25 cents by the Joseph Seep Purchasing Agency. Three grades of Western Kentucky crude were advanced 25 cents by the Indian Refining Co. and Paragon Development Co. The Standard Oil Co. of Louisiana advanced Smackover and Cotton Valley crudes 15 cents each and all other grades in Louisiana and Arkansas 25 cents each. Atlantic Oil Producing Co. advanced Stephens, Ark., crude 25 cents.

February 17.—The Prairie Oil & Gas Co., Sinclair Crude Oil Purchasing Co. and Magnolia Petroleum Co. advanced their prices on 36 to 38.9 and 39 to 41.9 gravities 5 cents and 15 cents respectively, meeting Humble prices in North Texas.

$1,500 An Acre for Ancient Oil Leases In Bradford Field

BRADFORD, Pa., Feb. 16.—Paying over $1,500 an acre for old production and at the rate of $10,000 per bbl. the Petroleum Reclamation Co. purchased the holdings of Beecher M. Mott of this city in the Bradford Field and is checking up a number of other properties with a view to purchasing them. The Petroleum Reclamation Co. was represented in the negotiations for the property by Dr. Joseph B. Umpleby, of the University of Oklahoma, and a geologist of note in the Mid-Continent Field; R. L. Scovil of New York; Harry A. Ruchards of New York and L. B. Holland of Oklahoma City, Okla. The company has established offices here and Doctor Umpleby is in charge until the arrival of Hugh McKinney, another member of the company who will be resident manager. The company plans to drill 65 wells on the property, which consists of 455 acres in Rutherford Run, State Line and Pratts Hollow, with 180 wells now producing 70 bbls. a day.

TAKES OPTION ON REFINERY

OMAHA, Neb., Feb. 17.—The Henry H. Cross Co., marketing and refining organization with headquarters in Chicago, has taken an option on the refinery of the Omaha Refining Co., located in East Omaha. The company has made test runs at the plant, which has been shut down for some time. The plant is owned by a group of Wyoming producers headed by E. T. Williams of Casper, Wyo. The plant was operated part of last year on crude obtained by tank car from the Wyoming fields.

LEASES REFINERY

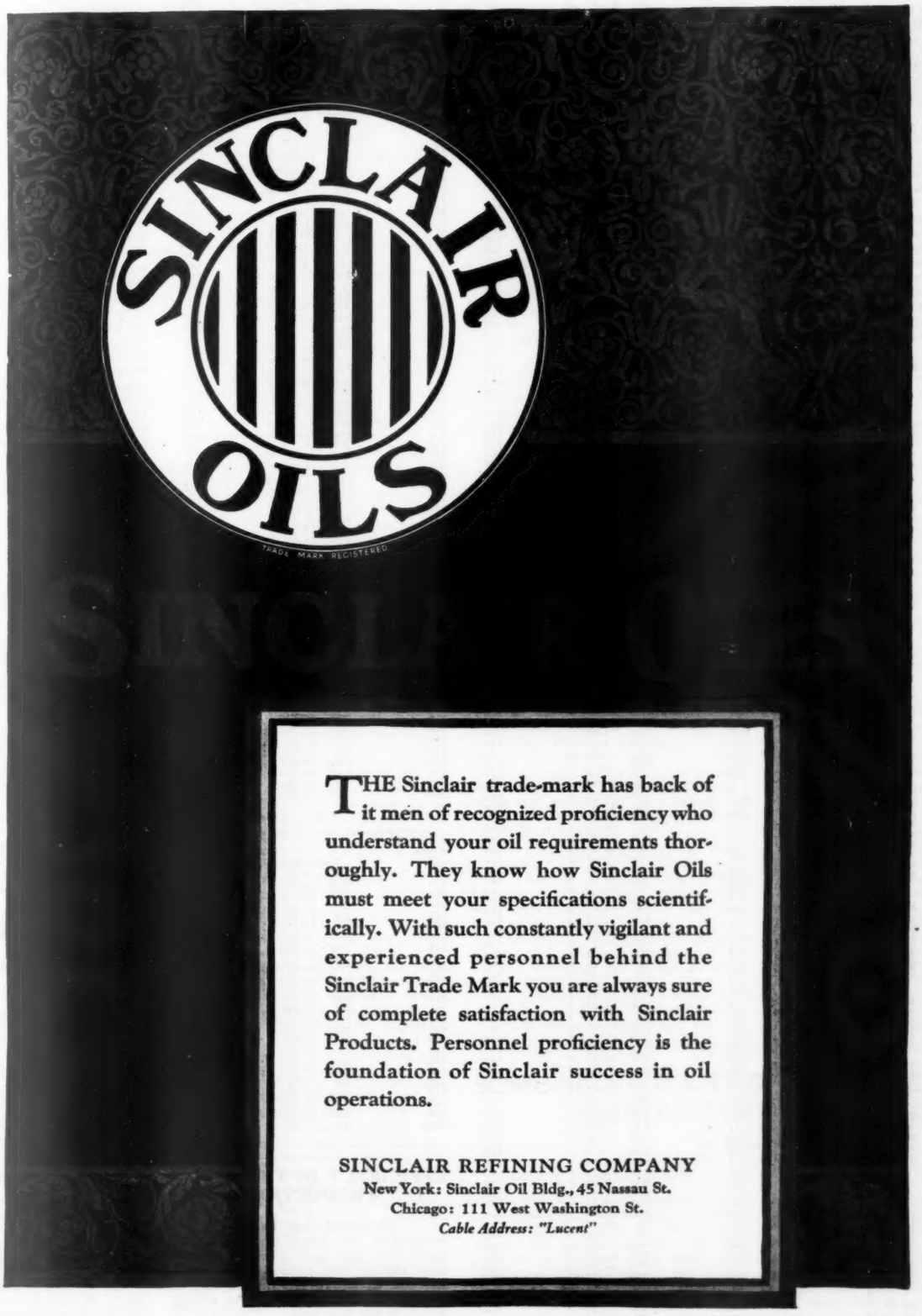
The Milliken Refining Co.'s plant at Arkansas City, Kans., has been leased by the Bell Oil & Gas Co., and operations have been taken over by the latter concern. The lease became effective February 1. The Moore Refining Co. has operated the plant for some time on a purchase lease arrangement which was terminated recently. The Bell Oil & Gas Co. has handled the sale of the lighter products of this refinery since last March, and according to Albert Finston of the latter concern it will now run the plant at its capacity of 6,000 bbls. daily in addition to the 2,000 bbls. rerun in the crackers. A complete line of refined products is made at this refinery. The Bell Oil & Gas Co. also operates a refinery at Grandfield, Okla.

EXPANDING FACILITIES

KANSAS CITY, Mo., Feb. 16.—The Derby Oil & Refining Corp., of Wichita, Kans., is expanding its facilities in this territory. The company is building several bulk and filling stations east of here. It is one of the largest independent marketing and refining concerns in the territory in which it operates, which centers in Kansas and covers parts of Missouri, Nebraska and Colorado.

MORE HIGH PRESSURE STILLS

HOUSTON, Tex., Feb. 14.—The Pure Oil Co. is putting in additional high pressure stills at its refinery at Smiths Bluff, near Port Arthur. The Pure Oil Pipe Line Co. is increasing the capacity of its line from the Mexia, Powell and Wortham Fields, putting in long loops that will enable it to run over 30,000 bbls. a day to Smiths Bluff.



THE Sinclair trade-mark has back of it men of recognized proficiency who understand your oil requirements thoroughly. They know how Sinclair Oils must meet your specifications scientifically. With such constantly vigilant and experienced personnel behind the Sinclair Trade Mark you are always sure of complete satisfaction with Sinclair Products. Personnel proficiency is the foundation of Sinclair success in oil operations.

SINCLAIR REFINING COMPANY
New York: Sinclair Oil Bldg., 45 Nassau St.
Chicago: 111 West Washington St.
Cable Address: "Lucent"

ONLY 6 BURBANK TRACTS IN THE MARCH SALE OF OSAGE OIL LEASES

The next aution sale of Osage leases will be held in Pawhuska on Wednesday, March 18, as announced in The Oil and Gas Journal last week. A total of 326 tracts, of which all but four will be quarter sections, or 160 acres, and making a total of 51,554.15 acres on the east side, or east of Range 7, wil lbe offered, while on the west side, 25 tracts, all but four of which will be full quarter sections, and aggregating 3,673.83 acres will be put up for sale.

Of the west side tracts only six are in the Burbank area. These are Tract 344, southwest quarter of Section 15-26-6; Tract 345, southwest quarter of Section 17-26-6; Tract 346, southwest quarter of Section 17-26-6; Tract 347, southeast quarter of Section 2-27-5; Tract 348, northwest quarter of Section 12-27-5 and Tract 349, southeast quarter of Section 12-27-5. These tracts adjoin acreage sold at the last sale. Tracts will be offered in Township 24-6, 25-6 and 26-4 on the outskirts of the general Burbank area, but they are strictly wildcat.

Description of land to be offered east of Range 7.

Tract No.	Description	Acreage
1	NE 9-27-12	160
2	NW 9-27-12	160
3	SW 9-27-12	160
4	NW 4-28-12	160
5	NW 16-28-12	160
6	NW 18-28-12	160
7	SE 18-28-12	160
8	NW 21-28-12	160
9	NE 28-28-12	160
10	NW 33-28-12	160
11	NE 4-20-11	160
12	NE 24-20-11	160
13	NW 24-20-11	160
14	Fr. NE 32-20-11	80
15	Fr. SE 32-20-11	101.94
16	Fr. NW 33-20-11	80
17	Fr. SW 33-20-11	102.21
18	NW 15-21-11	160
19	SW 15-21-11	160
20	SW 27-21-11	160
21	SE 28-21-11	160
22	NE 23-22-11	160
23	SW 3-26-11	160
24	SE 4-27-11	160
25	SW 4-27-11	160
26	NE 14-27-11	160
27	NW 14-27-11	160
28	NE 16-27-11	160
29	SE 16-27-11	160
30	Se 10-28-11	160
31	NE 11-28-11	160
32	SW 11-28-11	160
33	SE 18-28-11	160
34	SW 18-28-11	160
35	NE 22-28-11	160
36	SW 22-28-11	160
37	NW 24-28-11	160
38	SW 24-28-11	160
39	NE 26-28-11	160
40	NE 29-28-11	160
41	NW 33-28-11	160
42	NE 34-28-11	160
43	SE 35-28-11	160
44	NW 36-28-11	160
45	NE 32-29-11	160
46	SE 32-29-11	160
47	NW 33-29-11	160
48	SW 33-29-11	160
49	NW 2-20-10	160
50	SW 2-20-10	160
51	NW 14-20-10	160
52	NW 15-20-10	160
53	SE 21-20-10	160
54	Fr. SW 21-20-10	101.1
55	NE 22-20-10	160
56	NW 26-20-10	160
57	SE 27-20-10	160
58	SW 5-21-10	160
59	NE 9-21-10	160
60	SE 20-21-10	160
61	NE 29-21-10	160
62	NW 30-21-10	160
63	SW 30-21-10	160
64	NW 32-21-10	160
65	NE 7-22-10	160
66	NE 17-22-10	160
67	SE 17-22-10	160
68	NE 5-23-10	160
69	NW 7-23-10	160
70	SW 7-23-10	160
71	SE 28-23-10	160
72	NE 29-23-10	160
73	NE 30-23-10	160
74	SW 30-23-10	160
75	NW 31-23-10	160
76	SW 1-25-10	160
77	NE 2-25-10	160
78	SE 2-25-10	160
79	NE 9-25-10	160
80	SE 9-25-10	160
81	SW 11-25-10	160
82	SW 13-25-10	160
83	NW 26-25-10	160
84	SE 26-25-10	160
85	SE 27-25-10	160
86	NE 35-25-10	160
87	NW 35-25-10	160
88	SE 4-26-10	160
89	NW 13-26-10	160
90	NE 14-26-10	160
91	NE 16-26-10	160
92	NW 17-26-10	160
93	SW 17-26-10	160
94	NW 22-26-10	160
95	SW 22-26-10	160
96	SE 28-26-10	160
97	SE 29-26-10	160
98	SW 29-26-10	160
99	NW 5-27-10	160
100	NE 8-27-10	160
101	SE 8-27-10	160
102	NW 19-27-10	160
103	NW 20-27-10	160
104	SE 20-27-10	160
105	SW 29-27-10	160
106	NE 30-27-10	160
107	NW 31-27-10	160
108	SW 32-27-10	160
109	SE 7-28-10	160
110	NW 8-28-10	160
111	SE 18-28-10	160
112	NW 19-28-10	160
113	SE 19-28-10	160
114	NE 25-28-10	160
115	SW 28-28-10	160
116	SE 31-28-10	160
117	NE 32-28-10	160
118	NE 35-28-10	160
119	SE 35-28-10	160
120	NW 14-29-10	160
121	SW 14-29-10	160
122	NE 17-29-10	160
123	SE 18-29-10	160
124	SW 18-29-10	160
125	SW 19-29-10	160
126	NE 25-29-10	160
127	SE 25-29-10	160
128	NW 30-29-10	160
129	SW 31-29-10	160
130	NE 30-20- 9	160
131	NW 3-20- 9	160
132	SE 3-20- 9	160
133	Fr. SW 3-20- 9	149.45
134	Fr. NE 10-20- 9	54.45
135	Fr. NW 10-20- 9	5
136	SW 8-21- 9	160
137	SE 12-21- 9	160
138	NE 18-21- 9	160
139	NW 18-21- 9	160
140	NE 25-21- 9	160
141	NE 32-21- 9	160
142	NW 35-21- 9	160
143	SW 35-21- 9	160
144	SW 36-21- 9	160
145	NE 20-22- 9	160
146	NW 20-22- 9	160
147	NW 24-22- 9	160
148	SW 24-22- 9	160
149	SE 25-22- 9	160
150	NW 26-22- 9	160
151	NE 27-22- 9	160
152	SE 34-22- 9	160
153	NE 13-23- 9	160
154	NE 23-23- 9	160
155	NW 24-23- 9	160
156	NE 25-23- 9	160
157	NE 26-23- 9	160
158	NW 31-23- 9	160
159	SE 32-23- 9	160
160	NW 36-23- 9	160
161	SW 36-23- 9	160
162	NE 10-24- 9	160
163	NW 11-24- 9	160
164	NE 12-24- 9	160
165	NW 12-24- 9	160
166	NE 18-24- 9	160
167	NW 18-24- 9	160
168	NW 19-24- 9	160
169	SE 6-25- 9	160
170	NE 7-25- 9	160
171	NW 22-25- 9	160
172	NW 27-25- 9	160
173	NE 4-26- 9	160
174	NW 4-26- 9	160
175	SE 4-26- 9	160
176	SW 4-26- 9	160
177	NW 6-26- 9	160
178	NE 15-26- 9	160
179	SE 15-26- 9	160
180	SE 17-26- 9	160
181	NE 20-26- 9	160
182	NE 26-26- 9	160
183	SW 26-26- 9	160
184	NW 28-26- 9	160
185	NW 29-26- 9	160
186	NE 30-26- 9	160
187	NE 31-26- 9	160
188	NW 32-26- 9	160
189	NW 33-26- 9	160
190	SW 3-27- 9	160
191	NE 5-27- 9	160
192	SW 5-27- 9	160
193	NE 8-27- 9	160
194	NW 9-27- 9	160
195	SE 13-27- 9	160
196	SE 15-27- 9	160
197	NW 16-27- 9	160
198	NE 17-27- 9	160
199	NE 18-27- 9	160
200	SE 19-27- 9	160
201	SW 23-27- 9	160
202	NW 24-27- 9	160
203	SE 25-27- 9	160
204	SW 26-27- 9	160
205	SE 27-27- 9	160
206	NW 28-27- 9	160
207	SW 29-27- 9	160
208	SE 32-27- 9	160
209	NE 33-27- 9	160
210	SW 34-27- 9	160
211	NE 1-28- 9	160
212	NE 2-28- 9	160
213	NW 4-28- 9	160
214	SE 4-28- 9	160
215	SW 6-28- 9	160
216	NW 7-28- 9	160
217	SW 8-28- 9	160
218	NE 12-28- 9	160
219	SW 22-28- 9	160
220	SE 23-28- 9	160
221	SE 27-28- 9	160
222	NW 28-28- 9	160
223	SW 28-28- 9	160
224	NW 30-28- 9	160
225	SW 30-28- 9	160
226	SE 32-28- 9	160
227	SW 33-28- 9	160
228	NE 34-28- 9	160
229	SE 35-28- 9	160
230	SE 25-29- 9	160
231	SW 30-29- 9	160
232	NW 31-29- 9	160
233	NE 34-29- 9	160
234	NE 35-29- 9	160
235	SE 35-29- 9	160
236	NE 3-22- 8	160
237	SW 3-22- 8	160
238	NW 4-22- 8	160
239	NE 9-22- 8	160
240	NE 16-22- 8	160
241	NE 20-22- 8	160
242	NW 25-22- 8	160
243	NE 26-22- 8	160
244	NE 31-22- 8	160
245	NW 31-22- 8	160
246	NW 15-23- 8	160
247	SW 15-23- 8	160
248	NW 3-24- 8	160
249	NE 4-24- 8	160
250	NW 12-24- 8	160
251	NE 13-24- 8	160
252	NE 12-25- 8	160
253	SW 12-25- 8	160
254	NE 15-25- 8	160
255	SW 17-25- 8	160
256	SE 19-25- 8	160
257	NE 22-25- 8	160
258	SW 22-25- 8	160
259	NE 31-25- 8	160
260	NW 1-26- 8	160
261	SW 1-26- 8	160
262	NW 3-26- 8	160
263	SE 6-26- 8	160
264	SW 6-26- 8	160
265	SW 9-26- 8	160
266	NE 19-26- 8	160
267	SW 20-26- 8	160
268	NW 24-26- 8	160
269	SE 28-26- 8	160
270	NE 29-26- 8	160
271	NW 31-26- 8	160
272	SE 31-26- 8	160
273	NE 36-26- 8	160
274	NW 1-27- 8	160
275	NW 2-27- 8	160
276	NW 3-27- 8	160
277	SW 7-27- 8	160
278	NW 9-27- 8	160
279	SE 9-27- 8	160
280	SE 11-27- 8	160
281	SE 14-27- 8	160
282	NW 18-27- 8	160
283	SE 19-27- 8	160
284	SW 22-27- 8	160
285	SW 23-27- 8	160
286	NW 24-27- 8	160
287	NE 25-27- 8	160
288	SW 27-27- 8	160
289	SE 31-27- 8	160
290	SW 33-27- 8	160
291	NW 34-27- 8	160
292	NE 35-27- 8	160
293	NW 1-28- 8	160
294	SW 3-28- 8	160
295	NE 6-28- 8	160
296	NW 7-28- 8	160
297	NW 8-28- 8	160
298	NW 10-28- 8	160
299	SE 11-28- 8	160
300	NE 12-28- 8	160
301	NW 13-28- 8	160
302	SW 18-28- 8	160
303	SE 22-28- 8	160
304	NE 23-28- 8	160
305	NW 25-28- 8	160
306	SW 27-28- 8	160
307	NW 29-28- 8	160
308	SW 30-28- 8	160
309	SW 31-28- 8	160
310	NE 33-28- 8	160
311	NW 35-28- 8	160
312	SE 36-28- 8	160
313	NE 15-29- 8	160
314	SE 15-29- 8	160
315	SW 16-29- 8	160
316	NE 17-29- 8	160
317	SW 17-29- 8	160
318	SW 21-29- 8	160
319	SW 22-29- 8	160
320	NE 23-29- 8	160
321	SW 23-29- 8	160
322	NE 25-29- 8	160
323	NE 26-29- 8	160
324	NE 33-29- 8	160
325	NW 35-29- 8	160
326	NW 36-29- 8	160

Acreage, east side 51,554.15

Description of land to be offered west of Range 8:

Tract No	Description	Acreage
327	NE 8-27- 7	160
328	NW 9-22- 7	160
329	NE 19-24- 7	160
330	SE 19-24- 7	160
331	NE 11-25- 7	160
332	SE 11-25- 7	160
333	NE 9-28- 7	160
334	NW 10-28- 7	160
335	Fr. NE 31-23- 6	78.15
336	NE 32-23- 6	160
337	Fr. NW 32-23- 6	152.31
338	Fr. SE 32-23- 6	72.1
339	Fr. SW 32-23- 6	11.27
340	SE 31-24- 6	160
341	SW 31-24- 6	160
342	NE 28-25- 6	160
343	NW 28-25- 6	160
344	SW 15-26- 6	160
345	SW 17-26- 6	160
346	SW 17-27- 6	160
347	SE 2-27- 5	160
348	NW 12-27- 5	160
349	SE 12-27- 5	160
350	NE 16-26- 4	160
351	SE 16-26- 4	160

Acreage, west side 3,673.83

EFFICIENCY IN THE PRODUCTION OF OIL

(Continued from Page 21)

recoverable. No means has yet been devised that will even promise anything near 100 per cent extraction, but scientific men are studying various theories of oil recovery all the way to mining, which is the last resort. This calls attention to a question asked by the board the intent of which will likely puzzle those to whom it is directed. It is this: "With new and improved methods of recovery making for conservation what means do you consider equitable and practicable for applying the economy to all the nation's oil resources, rather than only such part as may be owned by the company controlling the patent?"

This question requires elucidation. It might be taken to mean there is a movement on foot to withhold from scientific men and inventors in the oil industry what is freely conceded to inventive genius in every other line of endeavor. As a matter of fact it has been so interpreted.

Modern Efficiency Methods

Efficiency in production means much more than the use of gas from the top of an oil sand. The importance of the value of such gas in dollars and cents is debatable. In the opinion of many oil men it would cost more to save it and utilize it than to free it and get the oil that underlies it. Some efficient production men will say that the value of such gas is an inconsiderable item in the general business of oil production. If the gas used to restore pressure in old wells is not recoverable and does not enrich the dead oil and cannot do more than air can be made to do, where does its value lie to the owner or those around h'm, they ask.

Outside of the loss of such gas there is little wastefulness in the production of oil where properties are operated by oil men of experience. Every effort is made to save all the production. In the Wortham Field, the latest of the so-called gusher fields, every well was completely fitted up to take care of the oil as soon as it came. The oil was immediately directed into vapor-tight tanks; gas separators were commonly used; wells were "pinched in" in order to hold back the salt water and to keep the oil clean, and Wortham is typical of the modern oil field. Producing methods in the Burbank and Tonkawa fields result in getting the last drop of oil and in using every thousand feet of gas.

The extraction of gasoline from casinghead gas has not only put to use a waste product but has materially aided in supplying the motor fuel needs of the country; the gravity of crude oil is maintained in vapor-tight tanks; the use of vacuum, compressed air and other artificial methods of extracting production has helped to maintain crude production where it will meet trade requirements.

The oil industry is open minded on the question of improved methods. It is paying out millions yearly for scientifically and technically trained men to help it solve its problems, one of the biggest of which is the recovery of the billions of barrels of crude oil which present methods of extraction will not recover from the sands. It has had the hearty and valuable cooperation of the Bureau of Mines and the Geological Survey, but the bureaus and the industry are still groping. Progress has been made, but there is yet much to be done before the solution is found.

IOWA OIL DEALERS HEAR F. A. PIELSTICKER

(Continued from Page 21)

fixed on a general established, tank wagon probably the Standard Oil Co. of Indiana, but the official price is often not the actual price in certain territories.

"The marginal contract cuts out any chance for a jobber to use any of his own buying ability, giving him no chance to 'shop.' He must order his product as he needs it, regardless of the cost or his chance for a profit. Those who bought on an open market thus had the advantage of price fluctuations.

"The marginal contract forces the refiner to sell at a specified rate during the duration of the contract, so he loses if the price goes below it, as it is impossible to figure on the market.

"All in all the marginal contract system is all right in theory but not in practice, for self-preservation is the first law of human nature, so if one man in a county should cut prices, another is apt to follow and all would to protect their businesses. It is a case of either sticking to the marginal contract or violating an agreement, it is true, but one is apt to look out for his own interests.

"The marginal contract may cause a

and feeling, for if there is a 4-cent price set, and a 7-cent raise, the refiner is not apt to be delighted with such a situation. The system likewise creates secret rebates," Mr. Pielsticker concluded.

L. V. Nicholas, president of the National Petroleum Marketers' Association, told the independents to consider the precariousness of their situation, under the present system of independent refiners, jobbers and retailers.

H. G. James Speaks

H. G. James of Kansas City, Mo., secretary of the American Oil Men's Association, said that from a statistical basis of supply and demand the oil men were facing a prosperity period, but warned that overproduction was a big factor, and that few if any economic businesses carried as much waste as the petroleum for evaporation and other reasons.

J. R. Battenfield, of Kansas City, Mo., and of the Battenfield Grease & Oil Co., emphasized the profit and importance in developing the grease selling business at stations.

"More people are coming to realize the importance as economy in having their cars well and regularly greased, and this gives the retailer a chance not only to make money but to develop a good service business that will bring in good money in return.

"One must know his product well, and have his station attendants well posted on the product. I know one company that installed greasing racks and mailed circulars with a result that its business was boosted an amazing amount in a few weeks. I advocate a part of advertising given exclusively to grease," he said.

L. W. Jaeger of the Bartles-Shepherd Oil Co., advised retailers to consider service primarily instead of money and money would be the ultimate result. He declared that many retailers were selling oil and making money because people were obliging enough to come around and buy it, rather than because of any business ability.

Officers elected were L. F. Kuehnle, Dubuque, president, reelected; H. E. Wormhoudt, Des Moines, first vice president; J. T. Conover, Calmar, second vice president; H. G. Scharfenbert, Fort Dodge, third vice president; J. M. Cushman, Des Moines., treasurer, and the secretary to be elected. Directors are J. L. Collins, Knoxville; H. C. Wurster, Waterloo; S. L. Lommell, Waterloo; F. J. Grounds, Greenfield; R. D. Seeley, Mason City and C. C. Johnston, Eldon.

ENGINEERS' INSTITUTE TOLD ABOUT PETROLEUM

(Continued from Page 26)

other plan is offered which he believes is as good or better. He said he believed the Federal Govcernment has power to legislate on this matter and cited reasons why it should do so.

"I am prepared to say that if the unit plan is adopted we can recover at least double as much oil as we do now and can conserve at least 66⅔ per cent of our gas. I am also prepared to say that if the unit plan is adopted we will have many pools producing oil steadily and economically and all maintained in the condition which now characterizes flush production and in case of war our petroleum production can be increased overnight to take care of the increased needs of our Navy, our Army and our industries.

Nothing to Fear

"The oil business has nothing to fear and everything to gain by a complete and thorough investigation and we can benefit by the most widespread publicity of every detail of the business. The commission appointed by the President could not be of higher character. No matter what the final report of the commission may be I cannot conceive of the whole movement resulting in anything but good to the industry and the public."

The oil symposium embraced all oil producing countries and all divisions of the United States petroleum development. It was introduced by a paper by E. de Golyer, retiring chairman of the petroleum division and vice president of the Amerada Petroleum Corp., on world production of petroleum in 1924 in which he made the preliminary estimate of 1,016,000,000 bbls., as against 1,017,-100,000 bbls. in 1923.

Papers on the Program

In adition to the papers by Messrs. De Golyer and Pogue the program was as follows:

Northern Appalachian Fields—Meredith E. Johnson.

Southern Appalachian Fields—David B. Reger, West Virginia Geological Survey.

Ohio—J. A. Brownocker, State Geologist, Ohio.

Kentucky—C. J. Norwood.

Tennessee—Wilbur A. Nelson, State Geologist, Tennessee.

Indiana—W. N. Logan, State Geologist, Indiana.

Illinois—G. F. Moulton.

Northern Arkansas and Northern Louisiana—Malcolm E. Wilson, Chief Geologist, Louisiana Oil Corp.

Texas-Louisiana Coastal Plain—David Donoghue.

Texas Outside the Gulf Coastal Plain—F. H. Lahee, Chief Geologist, Sun Oil Co.

Oklahoma—R. S. McFarland.

Kansas—Everett Carpenter.

Montana—Max Bauer.

Wyoming—E. L. Estabrook.

Colorado—C. H. Wegemann.

New Mexico—Dean Winchester.

California—R. R. Templeton.

Mexico—Valentin R. Garfias, Manager. Foreign Oil Department, Henry L. Doherty & Co.

Venezuela—Edwin B. Hopkins, Consulting Geologist. New York.

Peru—V. F. Marsters, Consulting Geological Engineer, Kansas City, Mo.

Colombia—L. G. Huntley, Consulting Geological Engineer, Pittsburgh, Pa.

France and the French Colonies—P. Martignan, Technical Assistant, French Embassy.

Rumania and Poland—Henry C. Morris, Chief, Petroleum Division, United States Department of Commerce.

Canada—George S. Hume, Canadian Geological Survey.

Tunisia—George W. Baekeland.

Russia—A. Beeby Thompson.

Determining the Constants of Oil Production Decline Curves—Harry M. Roeser, Engineer Physicist, Bureau of Standards.

Comparative Sutdy of Well Logs on the Mexia Type Structure—Frederic H. Lahee, Chief Geologist, Sun Oil Co.

Oil Geology of Northern Venezuela—A. Hamilton Garner, Consulting Geologist, New York, N. Y.

Exploration for Petroleum in the Limagne, France—A. Werenfels, Ph. D., Basle, Switzerland.

What Shall Be Done with Oil and Gas Wells to Safeguard Mining Operations?—A. W. Hesse, Nemagolin, Pa.

Note on Ratio of Peak Production to Certain Oil Fields—G. B. Richardson.

Extractability as Influenced by Size of Grain of Oil Sands—R. S. Christie.

Increasing Production by Increasing Diameter of Wells—Lester C. Uren, Associate Professor, Petroleum Engineering, University of California.

Signifcance of Fluid Level in Oil Well Pumping—Lester C. Uren.

Significance of Fluid Level

In his paper on significance of fluid level in oil well pumping, Professor Lester C. Uren offered the following summary and conclusions:

Summary and Conclusions

The position of the fluid surface maintained within a well has an important influence on its productivity. Under the conditions prevailing within a well at a given time, maximum production is realized only when the fluid surface is maintained at a particular level and slight variation from this economic level will often greately alter the recovery. If the static fluid level and the thickness of the productive stratum are known, the elevation at which the fluid surface should be maintained may be approximately computed. For low pressures, a lower level will be preferable; never, however, below the middle point of the productive sand.

The importance of a knowledge of the fluid levels maintained in wells while the pumps are at work is emphasized. To provide a means of determining the level of the fluid surface within a well at all times, a design for a fluid-level indicator is described and the advantages accruing to the oil producer through its practical use are discussed. The use of such a device should lead to a greater rate of production and consequently greater ultimate production; it will also be useful in indicating promptly breakage or mechanical inefficiencies of the pumping equipment. Its possible use in locating the source of water entering an oil well from an extraneous source is also suggested.

Bearing of Price Upon Oil Reserves
By Joseph E. Pogue

It is well known that one of the cornerstones of economic theory is the so-called law of supply and demand, which, really, is a group of economic laws, one of which may be succintly stated: A rise in price tends, sooner or later, to increase supply. It is the fear that, in the case of petroleum, a limited natural resource, a point will soon be reached when supply will not respond adequately to price advances, which in recent years has prompted a movement for oil conservation. This movement has lately taken concrete shape in the appointment of a Federal Oil Conservation Board by the President.

An important aspect of the law of supply and demand is that the supply of any commodity is not an entity per se, but is a factor of price. Supply, without the specification of price, has no exact meaning; and in practice supply cannot be divorced from considerations of price.

In its technical usage, supply is the quantity of a commodity that is bought currently on the market at a given price. In the case of a natural resource, however, this quantity will eventually depend not alone on price but on the physical volume of the reserve that exists and that, in consequence, can respond to the stimulus of price. A natural resource reserve, mathematically, is a variable and the size of the reserve becomes larger as price increases. This law holds for oil. The size of the oil reserve will vary with price and its magnitude cannot be defined without reference to price. The oil reserve has a given size with oil at $2 a barrel, and is larger by some unknown multiple with oil at $4 a barrel.

The economic sources of oil, broadly speaking, are five in number:

1. Petroleum available from oil fields by present methods under the stimulus of current prices (say, an average price level of $2).
2. Petroleum derivable from oil fields by new and more intensive methods that will be developed or become available under higher prices.
3. Oil derivable from oil shales (and tar sands) under higher prices.
4. Oil derivable from coal and lignites by improved methods under higher prices.
5. Oil, including alcohol, derivable from vegetable organic sources, either natural or cultivated, under the stimulus of higher prices.

This indicates the reserve of oil under a $2 price level is relatively small, but under increasing increments of price would become very large.

We do not know the fuel price at which the normal growth of automotive transportation would begin to be regarded. Certainly it could not stand a sixfold increase in the price of gasoline—dollar gasoline. Fortunately, however, it is not necessary that the fuel cost of automotive transportation shall rise in proportion to any necessary increase in the price of crude oil.

In the first place, the proportion of motor fuel derivable from a barrel of crude oil can be practically doubled over present practice, in the course of time, by cracking deeper into the crude, by raising the end point of the fuel, and by adaptation on the part of the engine. In the second place, the mileage obtained from a gallon of motor fuel can be, in time, at least trebled by the use of high compression engines, the employment of fuel "dopes," improved means of combustion, and other methods. The factors of increase specified are not named as exact figures, but the generalized statement is warranted from present knowledge that the automotive mileage derivable from a barrel of crude oil can be ultimately increased upwards of sixfold over present practice, when (or if) the cost of crude makes it necessary to do so.

Under present refinery practice in the United States, approximately 14 gallons of gasoline are recovered from each barrel of crude oil run to stills. If we assume that the average mileage is 14 miles to the gallon, each barrel of crude oil now contributes about 200 miles of automotive transportation. If we assume further that $2 per barrel is a normal price for crude oil, the average raw material cost per mile of automotive transportation is 1 cent.

If it should prove necessary, in order to increase our reserves of crude oil sufficiently to advance the price of crude oil ultimately to a height as extreme as $12 a barrel, or sixfold, it should be possible at the same time to increase the automotive mileage per barrel of crude oil sufficiently so that the fuel cost per mile would still be 1 cent.

If these conclusions are correct, the oil situation stands in need of only one force to effect its transition from an industry dependent on a limited source of supply to one resting on a vast and stable reserve; namely, a free and unrestricted price. When it becomes necessary to supplement the supply of gusher oil with oil derived from leaner and less tractable sources, there will be no means of effecting the transition except through the medium of prices that will bring the needed increments within the range of commercial exploitation.

SOME SIGNIFICANT DEVELOPMENTS ON INDUSTRY'S COMMERCIAL SIDE

By Richard Airey
Vice President Shell Union Oil Corp.
Delivered at annual dinner of the Oil Trades Association of New York

The effect of the fundamental change brought about by the introduction of the automobile began to be felt in the beginning of the present century. But even prior to that time there were many serious and difficult times which had to be faced. New sources of production were coming along and demanding an outlet. Russia became an important factor and its enormous production was not duplicated until the bringing in of Spindletop and later of Mexico.

During this period a very significant development was taking place in the far away Dutch East Indies. It was significant in that it laid the foundation for the later building up of the Royal Dutch-Shell group. In many other countries also explorations were being carried out in a search for additional sources of supply.

These events began to have their effect and the close of the nineteenth century saw a world wide competition springing from heretofore unexpected quarters. But it was a remarkable fact that with the growth of consumption it was found that the world took care of the production wherever it was produced and so it has been since the beginning of the industry. Science and invention creating new uses for petroleum have kept pace with the increasing production. Illustrative of the increase in the world's consumption of

PARMACO
PARKERSBURG MACHINE CO. PARKERSBURG, W. VA. U.S.A.

THERE
IS
A
DIFFERENCE
IN
PACKERS
=
PARKERSBURG
MACHINE CO.
PARKERSBURG W. VA.

petroleum is the ease with which it has absorbed the relatively new production in Persia which last year was about 30,000,000 bbls. of crude oil.

Value Relationship

The change in the value relationship of the products contained in a barrel of crude is again manifesting itself in the growing use and importance of liquid fuel for marine and industrial purposes.

With regard to liquid fuel, Texas is largely responsible for its world wide use. The discovery of Spindletop was responsible for a new era—and such names as Spindletop, Saratoga and Sour Lake will always be associated with the development of the use of oil fuel for naval purposes. The British Government was the pioneer in this line of endeavor and for years carried on experiments with the new fuel before finally adopting it for the fleet. The principal source of supply came from the coastal fields of Texas and the British Admiralty specifications for fuel oil, known to oil men the world over, were framed to apply to fuel oil from Texas coastal crude and hold to this day.

During the war it was commonly reported that Mexico suppiled the oil fuel for the British Navy. This impression was not in accord with the facts. When war broke out the British Navy went into active service with Texas oil fuel and with it kept the fleet in action.

One of the most interesting features of the war period was the fact that many of the American ships which joined forces with the British North Sea squadron were coal burners while the British ships were oil burners or a combination of coal and oil. Today there are very few naval vessels of any country which are not oil burning.

Lubricating Diesels

Evolution is constantly at work and today the attention of the shipping world is centered upon the Diesel oil engine. It is interesting in this respect to see that the leading petroleum companies are assisting in its development and have already placed in service a large number of tankers equipped with Diesel oil engines. The Diesel oil engine consumes per horse power a larger quantity of lubricating oil than the steam engine which should gladden the hearts of those who are engaged in the lubricating section of the trade.

Not only was Spindletop responsible for the revolutionary change in the class of fuel for naval purposes but the exportable surplus of kerosene began to compete in the European markets.

It may be appropriate at a meeting of oil men to refer in a word to the condition in Russia. At one period this great country equaled the then production of the United States, and Russian kerosene in particular was pressed for sale throughout Europe and Asia. Coincident with this movement there was a great demand in Russia for education as the mass of the people was wholly illiterate. This led to the establishment of schools and created a demand for lamps and kerosene. The familiar school home work of the children required artificial light, with the result that this somewhat remote economic factor to the oil industry increased the domestic consumption of kerosene in Russia so enormously that prior to the war the quantity available for export had declined to such an extent as to become negligible.

Russian Competition

Today's Russian petroleum industry reflects the great demoralization of the Russian people. In addition to the welcome contribution to the world's requirements of gasoline and lubricating oil, it is now offering for sale large quantities of kerosene and liquid fuel, thus demonstrating failure to maintain education and industry, without which no nation can succeed. Many schools have been closed for various reasons—the factories are, in many cases idle—so that until these conditions are remedied, Russia will continue to place large quantities of kerosene and fuel oil on the world market.

No review of the world oil situation would be complete without some reference to the spectacular rise and decline of the Mexican Southern Fields which has taken place within recent memory. The "Golden Lane" stretching from Tepetate to Toteco is no more. Some production is still being obtained from Cerro Azul and Tierra Blanca, but they are practically the sole remaining survivors of what was one of the most prolific producing areas in the world. New drilling in this section is constantly disappointing. This decline in the South has brought about more active development in the North. In this section success has followed the drill, and production is now being obtained from a much wider area than formerly. Salt water has affected the older pools, but new discoveries are regularly coming in. This large production from our next door neighbor naturally affected our market during the past few years, but in my opinion its influence will no longer be adversely felt.

The development which is at present attracting the attention of the oil world is that now proceeding in Venezuela. Its influence is not likely to be a market breaker as was the case in Mexico where everything favored rapid exploitation. But indications are such that Venezuela promises to provide a large supply ot petroleum to meet the future need and many prominent American companies are actively at work there.

Foreign Sources

It is gratifying to see the increasing interest displayed by America in the production of oil in foreign countries. The United States has long been associated with and in many instances created and fostered foreign markets for the consumption of petroleum products, but it was somewhat slow in entering upon the search for oil outside of its own borders. The pioneer company in foreign development was the Standard, which took an early and prominent part in the exploitation of the oil resources of Rumania. But it was left to Mexico to provide a field to induce many of the large independent companies to search for a supply outside of the United States. This introduction to the foreign fields was only a beginning, and today the American producer is taking his part in the search and winning of oil in Venezuela and other South American countries. Perhaps in this respect the most interesting feature in connection with the development of foreign production is the success which has recently attended the work of the Standard Oil Co. of New Jersey in the Dutch East Indies.

We are now in a position to review the figures for 1924 and I will take gasoline for my example. The Bureau of Mines shows production and imports of 9,077,000,000 gallons and consumption and exports of 8,979,000,000 gallons, a margin for surplus of about 100,000,000 or four days' supply. This relatively small quantity, however, was not available at the chief consuming centers, it being entirely represented by the overmanufacturing in California in which State 120,000,000 gallons were added to their stocks during the year. East of the Rockies we thus actually sold all we produced, yet owing to want of confidence the market was spotted and prices were cut below the actual cost of the commodity.

We are facing a new year under similar conditions to those of a year ago. Prospects are again bright but if one cannot gain anything from experience, dissatisfaction will again arise; therefore, I would like everyone to take past experience to heart and apply it to creating and maintaining confidence in themselves and in the industry. Above all, we should realize the value of the commodity we are selling. If this is done 1925 will be a banner year and provide some recompense for the disappointments of 1923 and 1924.

KANSAS FIELDS

(Continued from Page 32)

Section 18-33-3; No. 4 Backus, C NW NW NW, Section 20-33-3; No. 2 Nelson, C SE SE NE, Section 20-33-3, and No. 3 Nelson, C NW SE NE, Section 20-33-3. The Waite Phillips Co. was moving in a rig for No. 1 Johnson, NE cor. Section 30-33-3. The J. A. Hull Co. had a rig up for No. 1, C SE SE SE, Section 14-32-4; was drilling at 250 feet in No. 2 Lewis, SE cor. SW NW, Section 24-32-4, and had a rig up for No. 1, C NE NW NE, Section 26-32-4.

Harvey County

The Derby Oil Co. abandoned No. 1 Conway, NW cor. SW SE, Section 4-23-2, in Harvey County, at 2,432 feet, and No. 1 Masters, NE cor. NW, Section 4-23-2, at 2,502 feet. Mason & Ralston abandoned No. 3 Conway, SW cor. NW SE, Section 4-23-2, a location.

Greenwood County

The Phillips Petroleum Co.'s No. 3 Teeter, C SW SW NW, Section 15-23-9, in the Teeter Pool, Greenwood County, was completed with sand at 2,285-2,373 feet, and was good for 300 bbls. after a 115-quart shot. The Skelly Oil Co.'s No. 2 Teeter, C NW NW SW, Section 15-23-9, was good for 400 bbls. at 2,257-00 feet. The same company's No. 3, C NW NE SW, Section 15-23-9, was good for 275 bbls. after a 160-quart shot in sand at 2,280-2,355 feet.

Rhodes & Able's No. 5 Browning, C NE SE SE, Section 18-22-10, was good for 35 bbls. after a 100-quart shot in sand at 2,363-2,401 feet. The Transcontinental Oil Co.'s No. 2 Nuttle, C NW NW SE, Section 2-23-9, had sand at 2,348-70 feet, and was good for 500 bbls. after a 60-quart shot. Buck and others' No. 1 Hines, NE cor. NW NW, Section 2-22-11, was spudded in and shut down. The York State Oil Co.'s No. 11 DeMolorie, C NE SW SE, Section 32-22-11, was making 30 bbls. naturally from sand at 1,899-1,963 feet.

The Skelly Oil Co.'s No. 4 Teeter, C NW NW SW, Section 15-23-9, was drilling at 1,500 feet. The Theta Oil Co. and the Kansan Oil Co. have a rig up for No. 1 Pixlee, C SE SW NE, Section 8-22-10. R. G. Gilespie had a rig up for No. 8 Browning, C SW SE NE, Section 19-22-10. The Transcontinental Oil Co. had a rig up for No. 3 Nuttle, C NE NE SW, Section 2-23-9, Beverly and others had a rig on the ground for No. 1 Green, SW cor. NW NE, Section 2-23-9, and for No. 2 Hartley, SE cor. SW NE, Section 2-23-9. The Skelly Oil Co. was building a rig for No. 1 Hartley, SE cor. NW, Section 2-23-9. The Empire Gas & Fuel Co. had a rig on the ground for No. 2 Kipfer, C SE SW SE, Section 11-22-11; was building a rig for No. 2 Duby, C SW NW SW, Section 14-22-11, and was drilling No. 1, C SW SW NE, Section 22-22-11, at 650 feet.

Butler County

Vickers and others' No. 1 Barnard, NE cor. Section 3-25-3, in Butler County, was completed with sand at 2,718-25 feet, making 125 bbls. Foraker and others abandoned location No. 1, SW cor. NE, Section 32-26-6. The Sparta Oil Co.'s No. 1 Palmer, NW cor. SE, Section 32-26-6, was dry and abandoned at 700 feet. The Derby Oil Co.'s No. 1 Joslin, C NW SW SE, Section 11-30-4, was swabbing 8 bbls. and preparing to shoot at 2,762-70 feet.

The Pure Oil Co. was rigging up No. 5 Maxwell, NE cor. SE NE SW, Section 31-24-4.

Sedgwick County

Boyle & Tack's No. 1 Metcalf, NE cor. SW NE, Section 6-25-1, Sedgwick County, was spudded in and shut down.

Jasper & Beshka's No. 1 Carry, C SW Section 26-28-1w, was drilling at 350 feet.

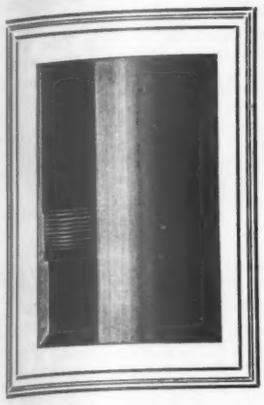
OKLAHOMA FIELDS

(Continued from Page 32)

Section 3-9-11, was drilling at 400 feet. The same company was building rigs for No. 6 Baker, SW cor. SE, Section 4-9-11, No. 3, C SE SW SW, Section 4-9-11, No. 2, C NE NE NW, Section 9-9-11, and No. 3, C NW NE NW, Section 9-9-11. The Superior Oil Corp.'s No. 1 Buck, SW cor. SE, Section 20-9-10, was drilling at 550 feet.

Seminole County

The Magnolia Petroleum Co.'s No. 2 Joshua, C SE SW SW, Section 29-8-8, in Seminole County, was pumping 75 bbls. from sand at 3,124-59 feet. The Prairie Oil & Gas Co.'s No. 1 Salinda, C NE SW NE, Section 31-8-8, was flow-



Texas Pattern Shoe.

Larkin

Shoes
Packers
Die Nipples
Swabs
Clamps
Oil Savers

QUALITY - First
Prices Reasonable

Sold By Leading Supply Companies

LARKIN
Packer Co.

St. Louis, Mo. Tulsa, Okla.

ing 60 bbls. an hour from sand at 3,260-64 feet. The Magnolia Petroleum Co.'s No. 2 Frantz, C NW SW SW, Section 32-8-8, was shot with 40 quarts in sand at 3,995-4,007 feet, and was flowing 100 bbls. a day.

The Transcontinental Oil Co.'s No. 1 Davis, C NE NE SW, Section 22-7-7, had a show of oil with water at 2,195-2,200 feet, and was underreaming the 8-inch. The Dixie Oil Co.'s No. 3 Walker, C NW NE NW, Section 32-8-8, was drilling at 400 feet. The Magnolia Petroleum Co. had a rig on the ground for No. 1, C NW SW SW, Section 18-7-5.

Cromwell Field

In the Cromwell Field the Sinclair Oil & Gas Co. had rigs up for No. 3 Fixico, C NW NE SE, Section 5-10-8; No. 4 Pierre, C NE SE SE, Section 33-11-8; No. 5 Pierce, C NW NE SE, No. 6 Pierce, C NE NE SE, No. 7 Pierce, C SW NE SE, and No. 8 Pierce, C SE NE SE, Section 33-11-8. The McMan Oil Co. had a rig up for No. 1 Hill, C SW SE SW, Section 34-11-8. The Sinclair Oil & Gas Co. and the Gardner Petroleum Co. were rigging up No. 2 Hill, C SW SW SW, Section 34-11-8, No. 2 Hill, C SE SW SW, No. 3 Hill, C NW SW SW, and were building rigs for No. 4 Hill, C NW NW SW, No. 5 Hill, C SW NW SW, and No. 6 Hill, C NE SW SW. The Sinclair Oil &Gas Co. was building a rig for No. 1 Jackson, C SW SW NW, Section 34-11-8.

Wagoner County

J. M. Pennington's No. 1-A McHenry, SE cor. SW, Section 29-18-15, in Wagoner County, was shut in for 3,000,000 feet of gas at 1,230-45 feet. The same owner's No. 3-A McHenry, CNL SE SW, Section 29-18-15, was dry and abandoned at 1,292 feet. Hughes & Harder's No. 1, SW cor. NW NW, Section 19-18-16, was shut in for 3,000,000 feet of gas at 932-45 feet.

J. M. Pennington was spudding in No. 4-A, SW cor. NE SW, Section 29-18-15.

Tulsa County

H. Jensen and others' No. 2-A, CSL SW SW SW, Section 36-19-12, was shot with 60 quarts in sand at 1,270-1,315 feet and was good for 10 bbls. Hall and others' No. 1 Marshall, SW cor. Section 27-29-14, had a good show of oil in sand at 1,326-62 feet, and was to have been shot. Pouder & Pomeroy's No. 6 Bruner, CSL NE SE SW, Section 9-18-13, was shot with 40 quarts in sand at 1,180-1,200 feet, and was good for 10 bbls. The Vick Oil Co.'s No. 5-A Perkins, CWL NW NW NE, Section 16-18-13, was dry and abandoned at 1,250 feet. Claude Hamilton's No. 4 Mullins, SW cor. NW, Section 32-18-13, was shot with 20 quarts in sand at 965-990 feet, and was good for 10 bbls.

The Sand Springs home was rigging up a machine for No. 3 Berryhill, SW cor. NW, Section 5-19-12. Munn Brothers had a rig on the ground for No. 1 Yarger, SE cor. SW SW, Section 20-19-12. H. C. Wilson was rigging up No. 3-A Postoak, CNL NE NW, Section 29-19-12. The Laurel Oil & Gas Co.'s No. 1-A, SW cor. NE SW, Section 4-18-13, was drilling at 600 feet.

Cotton County

Clark & Cowden's No. 3 Tettleton, SW cor. SE, Section 9-1s-9w, was drilling at 1,800 feet. Malernee and others had a rotary rig up for No. 1 Fowler, NE cor. SE SE, Section 28-2s-10w. Clark & Cowden were rigging up No. 3 Tettleton, SW cor. SE, Section 9-1s-9w.

Lincoln County

The Pure Oil Co.'s No. 1, C SE SE SW, Section 12-14-4, was drilling at 4,693 feet in a sand topped at 4,685 feet and showing gas. The Cosden Oil & Gas Co. was spudding in No. 1 Castleman, SW cor. Section 13-15-6. The Magnolia Petroleum Co.'s No. 1, SW cor. NE, Section 3-14-5, was drilling at 250 feet.

Pontotoc County

C. J. Wrightsman's No. 1, C SW NW NE, 24-4-4, in Pontotoc County, was dry and abandoned at 2,175 feet. The American Oil & Refining Co.'s No. 1, C SE NE SW, Section 3-4-6, had a 40-bbl. show at 1,235-1,300 feet, and 2,000,000 feet of gas at 2,330-2,445 feet, drilling at 2,445 feet. The same company's No. 1, C NE NE NE, Section 16-4-6, was completed for 8,000,000 feet of gas in sand at 1,350-1,434 feet.

Jefferson County

The Humble Oil & Refining Co.'s No. 1 Moore, C SE NE SE, Section 29-6s-5w, in Jefferson County, was dry and abandoned at 2,045 feet.

Ely and others' No. 1 Brown, NW cor. SE SW, Section 4-6-5w, was drilling at 260 feet. The Humble Oil & Refining Co.'s No. 1 Moore, C SE NE SE, Section 29-6s-5w, was dry and abandoned at 2,045 feet. The Carter Oil Co.'s No. 2 Seay, C NE SW SW, Section 34-6s-5w, was drilling at 710 feet. The Prairie Oil & Gas Co.'s No. 2 James, C SE NE SW, Section 34-6s-5w, was drilling at 400 feet.

Stephens County

The Humble Oil & Refining Co.'s No. 6 Ploughman, CEL NE NW, Section 25-1-9w, in Stephens County, was rigging up to pump from 2,068-81 feet, estimated production 35 bbls.

The Magnolia Petroleum Co. had a machine up for No. 3 Bond, NW cor. SE NW, Section 19-1-5w; was drilling at 1,250 feet in No. 1 Harris, C NE NE NW, Section 3-2s-5w, and underreaming the 10-inch casing at 1,370 feet. Frates and others were spudding in No. 1 Sweeney, C NW SW, Section 30-2-6w. The Knox Petroleum Co. and others' No. 1, SE cor. NW, Section 12-2-5w, was drilling at 350 feet. The Ka-Wye Oil Co. had a rig up for No. 1 Coffett, CNL NE SE, Section 26-1-9w. The Law Oil Co. and Smith were rigging up a rotary for No. 4 Brymer, NW cor. NE NE, Section 31-1-8w. The Magnolia Petroleum Co.'s No. 8 Ward, SE cor. Section 32-1-8w, was drilling at 2,000 feet. The Lone Star Gas Co.'s No. 1 Dolan, SW cor. SE SW, Section 17-1s-8w, was drilling at 230 feet.

Carter County

The Magnolia Petroleum Co.'s No. 1 Westerly, C NE NE SW, Section 19-1s-3w, in Carter County, was swabbing 50 bbls. from sand at 2,995-3,000 feet and was to have been deepened. The Twin State Oil Co.'s No. 1, C NW NW SW, Section 27-1s-3w, was completed for 350 bbls. in sand at 3,328-62 feet. The Magnolia Petroleum Co.'s No. 1 Schwartz, C SW NE NE, Section 26-2s-3w, was making 25 bbls. on the pump from sand at 2,829-67 feet. The Amerada Petroleum Corp.'s No. 18, C NW SE NE, Section 20-5s-1, was making 70 bbls. from sand at 1,286-1,300 feet after plugging back from 1,623 feet.

The Levant Oil Co.'s No. 2 Brewer, C SW NW SW, Section 27-1-3w, was drilling at 1,300 feet. The Humble Oil & Refining Co. set the 12½-inch casing at 48 feet in No. 3, C SE NE SE, Section 28-1s-3w, and shut down; a rotary rig was being rigged up for No. 4, C SE SE SE, same section. The Magnolia Petroleum Co.'s No. 1 Howard, C NW SW SW, Section 15-2s-3w, was shut down after setting 12½-inch casing at 257 feet. Westheeimer & Daube were rigging up No. 13 Dillard, C NW NE SW, Section 22-48-2W. The Amerada Petroleum Corp.'s No. 5 Clay, C SW NW NE, Section 28-5s-1, was drilling at 917 feet. The same company's No. 4 Clay, C SE NE NW, Section 28-5s-1, was spudding in.

Caddo County

C. English's No. 1 Swigert, SE cor. Section 32-6-9w, in Caddo County, was making 8,000,000 feet of gas from sands between 1,907 and 2,412 feet.

Crane & Smith were spudding in No. 1 Foster, NE cor. NW NE, Section 8-8-11w.

Grady County

Padgett & Hughes' No. 2 McFarland, NE cor. SW NW, Section 22-5-7w, Grady County, was dry and abandoned at 3,270 feet. The Sun Ray Oil Co. and others' No. 2 Chandler, NW cor. SE SW, Section 26-5-8w, was making 28,000,000 feet of gas from sand between 2,070 and 2,420 feet. The Magnolia Petroleum Co.'s No. 1 Abernathy, C SE SE, Section 28-3-5w, was dry and abandoned at 3,845 feet.

Briscoe & Nelson were building a rig for No. 1 Dryden, C SE SW, Section 2-4-8w.

A mark of Distinctive Service
for over a quarter of a century

Arrange for Your Annual Audit Now

To ascertain the actual financial condition and earnings for

- **(a) Proprietors (partners or stockholders);**
- **(b) Executives (managers, officers or directors);**
- **(c) Bankers or investors (for purchase of securities);**
- **(d) Bankers or creditors (considering loans or the discounting of promissory notes);**
- **(e) Ascertain whether fraud or irregularity exists.**

The results secured by an audit are *required* and *used* for the following purposes:

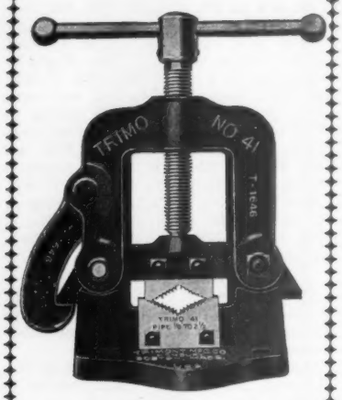
- **(a) For stock or bond holders who desire at regular intervals a condensed financial statement of the business and of the net results of operations.**
- **(b) For proposed sale or incorporation, additional capital, change in management, or on death of a partner or large stockholder.**
- **(c) To submit statements in detail to bankers or note brokers as a basis for credit.**
- **(d) To submit certified statements to mercantile agencies or others calling for periodical reports.**
- **(e) To ascertain the true causes for fluctuations of Profit or Expense.**
- **(f) To state the facts in disputes or litigation or investigate the causes of losses for creditors or stockholders.**
- **(g) *As a basis for the preparation of Federal Tax returns.***

J. H. Greenhalgh & Company

Public Accountants

4403 Sheridan Road, Chicago **16 King St., London**

TRIMO PIPE VISE



Realizing that the public interprets the name "TRIMO" on ANY tool as a guarantee of quality, we hereby announce the following combined features found in TRIMO PIPE VISES.

1. **Superior Design**
2. **Convenient Weight**
3. **Strength**
4. **Rigidity**
5. **Quick Action**
6. **Better Workmanship and finish.**

Jaws are made of tool steel, hardened and tempered and have *fine milled teeth, insuring better grip on the pipe.* The yoke, frame, and base are of guaranteed malleable iron—the screw, head and handle are of selected steel.

The ball ends of the handles are secured by a patent device, insuring smoothness for the hand. Made in FIVE SIZES.

No. 400	**⅛" to 1½"**
No. 40	**⅛" to 2"**
No. 41	**⅛" to 2½"**
No. 42	**⅛" to 3½"**
No. 40B	**⅛" to 2"**

No. 40B is a portable Kit Vise, made with apron; can be readily clamped to bench or post without drilling of holes.

ASK your hardware dealer, mill supply or plumbing supply house for TRIMO Pipe Vises and accept no other.

TRIMONT MFG. CO.
Roxbury, Mass.

America's Leading Wrench and Fine Tool Makers for Nearly 40 Years.

TRIMO

108

NORTH CENTRAL TEXAS

(Continued from Page 46)

ardizing to complete; same company's No. 12 Stephens is drilling at 600 feet; Staley and others' No. 1 Stephens, setting casing at 1,319 feet; same company's No. 2 Stephens is spudding; The Texas Co.'s No. 1-B Castlebury, fishing at 1,281 feet; same company's No. 202 Waggoner, drilling at 1,292 feet; No. 297 Waggoner at 1,225 feet; Texhoma Oil & Refining Co.'s No. 1 Bettis at 585 feet; same company's No. 1 Thomas at 450 feet; Waggoner and others' No. 1 Bond at 2,603 feet; Wells and others' No. 3 Waggoner, at 875 feet; Winnipeg Oil Co.'s No. 5 Bond at 1,200 feet; Wood and others' No. 1 Streit at 1,000 feet.

Baylor County.—Harris and others' No. 1 Howe at 1,275 feet; McCaldin and others' No. 1 Martin at 300 feet; Monroe Production Co.'s No. 1 Wallace at 600 feet; Richardson Brothers' No. 1 Wallace at 950 feet; Staley and others' No. 1 King, at 1,200 feet.

Clay County.—Cumley and others' No. 3 Stine is underreaming; Southern Exploration Oil Co.'s No. 1 Dunn is drilling at 900 feet; Ashcroft and others' No. 1 Chilson at 1,110 feet; Atlantic Oil Co.'s No. 1 Scaling is fishing at 3,112 feet; Mills and others' No. 1 Holloway, drilling at 490 feet.

Montague County.—Daniels and others' No. 1 Howard is underreaming; Mitchell and others' No. 1 Hinds is drilling at 300 feet; Texhoma Oil & Refining Co.'s No. 2 Howard, drilling at 200 feet.

Throckmorton County.—Larkin and others' No. 2 Richards at 775 feet; McGee and others' No. 1 Martin at 400 feet; McKnight and others' No. 1 Haley at 1,490 feet; Rider & Foster's No. 1 Stubblefield is fishing at 530 feet; Skinner and others' No. 1 Mitchell at 1,200 feet; The Texas Co.'s No. 1 Smythe is underreaming.

Palo Pinto County.—Britton and others' No. 3 Strawn Coal Co., fishing at 3,131 feet; Hart Oil Corp.'s No. 10 Hart at 727 feet; Phillips and others' No. 1 Caudill is cleaning out at 3,555 feet.

Callahan County.—Prewitt and others' No. 1 George T. Crane is fishing at 1,879 feet; same company's No. 1 W. W. Crane, drilling at 1,709 feet.

Mitchell County.—Eastland Oil Co.'s No. 2 Kenyard is drilling at 840 feet; Sloan and others' No. 3 Miller at 2,860 feet; California Co.'s No. 12 Morrison at 1,450 feet; same company's No. 1 Elder at 2,000 feet.

Sterling County.—Chicago-Texas Oil & Gas Syndicate's No. 1 Durham at 1,437 feet; Fidelity Oil Co.'s No. 1 Hull at 1,775 feet; Ford and others' No. 1 Foster at 1,600 feet.

Brown County.—Gillam and others' No. 7 Newton is cleaning out at 1,289 feet; Moore and others' No. 2 Westerman, drilling at 1,089 feet; New Era Oil Syndicate's No. 3 Prather at 1,307 feet; Williams and others' No. 1 Newton at 870 feet.

Reagan County.—Arkansas Fuel Oil Co.'s No. 1 University is fishing at 3,355 feet; Big Lake Oil Co.'s No. 16 University is drilling at 1,055 feet; No. 18 University at 870 feet; Hoffman and others' No. 1 University is spudding; Hughes Development Co.'s No. 1 University is drilling at 2,995 feet; University Oil Co.'s No. 1 University, at 2,505 feet; Texon Oil & Land Co.'s No. 4, group 1, University, at 2,707 feet.

Pecos County.—Arkansas Fuel Oil Co.'s No. 1 Blackstone at 770 feet; Plymouth Oil Co.'s No. 1 Perry at 800 feet.

PROPERTY CHANGES HANDS

BRADFORD, Pa., Feb. 16.—The Demps Oil & Gas Co., composed of James R. Evans, James G. Paul and A. J. Douglas of this city and James J. Shay of Sheffield, have sold their extensive holdings, located in Warren County to John G. Cochran & Co., of Sheffield. The lease consists of 900 acres on which are 85 oil and gas wells. The Demps company purchased the property in 1916 and has since successfully operated it. The consideration was not made public.

New Questionnaire Sent Technical Men By the Oil Board

WASHINGTON, D. C., Feb. 17.—The President's oil board today called upon the technical men in the oil industry, asking opinions as to the existing total refining capacity of the country as related to present and future consumption requirements, and whether the refining plants are efficiently distributed with relation to the supply of crude as well as to domestic consumption and exports.

They were also asked as to the causes of losses in refineries, whether coal or fuel oil is best adapted to fuel requirements of refineries, possibilities of improvements to get better separation of various distillates from petroleum and possibilities in the improvement of cracking processes. Views as to the desirability of utilizing fuel oil for domestic purposes and the practical possibilities for reclaiming lubricants are likewise sought.

BUYS TULSA STATIONS

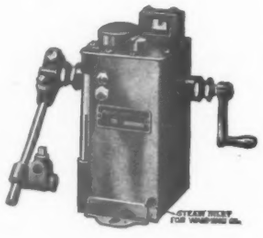
The entrance of the Marland Refining Co. of Ponca City, Okla., into the active marketing field in Tulsa was announced here Saturday when Wesley L. Nunn, manager of the retail marketing department of the company, made it known that 10 service stations in Tulsa formerly operated by the Tulsa Refined Oil Co., under the trade name of "Troco" had been purchased by the Marland company for $125,000.

LEGAL

TRIBAL OSAGE OIL LEASES AT PUBLIC AUCTION, MARCH 18, 1925, BY U. S. GOVERNMENT

March 18, 1925, at Pawhuska, Oklahoma, about 56,000 acres will be offered for oil leases in quarter section tracts. Bids will be for bonus in addition to royalties, 1/5 payable on day of sale, balance in three annual installments, with acceptable security. Within advertised area there are about 9,250 oil wells producing from one barrel to two thousand barrels each, the total daily production for December, 1924, being about 90,000 barrels; also, there are about 125 wells drilling. All lands are now leased separately for gas. Blue print maps of area advertised, showing tracts producing oil or gas, can be had for fifty cents each, also logs of producing oil or gas wells for twenty-five cents each well. Write U. S. Superintendent, Osage Agency, Pawhuska, Oklahoma, for maps, logs, or other information.

The Lubricator You Need on Your Drilling Engine



It puts the oil into the cylinders in just the right quantities as it is needed, without wasting a drop. It is not necessary to turn it on or shut it off.

Automatically adjusting itself to the speed of the engine, it always supplies just the right amount of oil.

THE "MANZEL" Force Feed Lubricator

Will oil your drilling engine the way it should be oiled and will keep it running every minute at its highest efficiency.

It is always on the job, too. Day or night, winter or summer, it supplies the oil regularly and in just the right quantities.

It requires no attention—never goes to sleep—never forgets.

When you are drilling you can forget all about your cylinder lubrication if you have a "Manzel" Force Feed Lubricator on your engine.

And it works equally well on mudhogs, pumps, air compressors and other machinery.

In fact, there is a "Manzel" Force Feed Lubricator to fit any type of oil country engine.

Let us send you catalog giving full information.
Sold by all leading supply dealers.

MANZEL BROTHERS COMPANY

336-338 Babcock Street **Buffalo, N. Y.**

MYERS SELF-OILING BULLDOZER POWER PUMPS

Like all other Myers Products, Myers Self-Oiling Bulldozer Power Pumps stand the acid test from a sales and profit standpoint just as they do from a service standpoint. Fashioned and built on fifty years of pump building experience, their qualities in both design and construction as well as those of their many exclusive improvements assure lasting satisfaction. Twelve sizes for shallow service—five sizes for deep service—capacities up to ten thousand gallons per hour—twenty-four hour operation, day in and day out, without care or attention. Your inquiry is solicited.

THE F. E. MYERS & BRO. CO. Ashland, Ohio
—ASHLAND PUMP AND HAY TOOL WORKS—

They Thought They Were *Economizing!*

Perhaps you know these people.

They buy ordinary balls and seats believing they are saving money.

Every 2 to 3 weeks they pull their rods—not realizing that each pulling job costs many times more than the best balls and seats money can buy; not realizing that NO-CO-ROS would last 6 to 18 *months* in the same wells. The

NO-CO-RO BALL & SEAT

never varies. Always the same non-corrosive alloy steel, always a true fit, always triple tested, always guaranteed. In oil industry work NO-CO-ROS stand alone. At your supply house or direct.

Manufactured by
NORRIS BROTHERS, Inc.
Manufacturers of Oil Well Pumping Equipment
ROBINSON, ILL.

143

Japan Oil Imports First Half of 1924 Almost Equal 1923

The demand in Japan for petroleum products shows a heavy increase, except in the case of kerosene, according to unpublished figures obtained from the Statistics Bureau of the Japanese Department of Finance. The total receipts for the first six months of 1924 of several commodities, such as gasoline, lubricating oils, and vaseline, almost equalled the quantities received during the whole of 1923. Kerosene was imported at a decreasing rate for the six-month period, but heavier shipments of this oil, such as are usually received in the late summer and autumn to take care of the winter demand, will probably bring the annual receipts of 1924 up to a figure approaching the total of 1923. Of the 13,419,000 gallons of kerosene imported, over 10,000,000 came from the United States, while less than 3,000,000 originated in the Netherlands East Indies. The following table shows the petroleum imports of Japan for 1922, 1923, and the first six months of 1924:

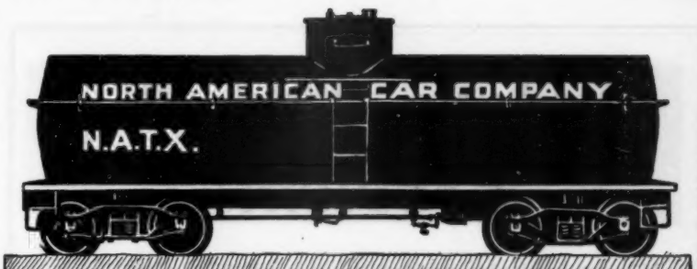
	1922 Gallons	1923 Gallons	First Half of 1924 Gallons
Crude	23,665,156	47,180,060	34,590,922
Gasoline	11,836,249	12,844,122	12,552,273
Kerosene—			
Packed	12,334,422	13,652,028	5,537,062
Bulk	21,525,712	17,612,877	7,881,993
Mineral colza	176,084	253,797	118,183
Other illuminating oils	5,667,711	3,174,056	5,114,896
	Pounds	Pounds	Pounds
*Other oils	33,458,961	75,039,475	68,234,985
Vaseline	1,393,655	1,230,981	1,046,578
Paraffin wax, melting below 45° C.	11,039,936	6,869,824	4,021,821
All other	30,205,790	34,827,082	22,180,401

*Includes lubricating oil, Diesel oil, etc.

The total imports for 1922 were valued at 50,091,543 yen (1 yen approximately 50 cents), for 1923 at 51,693,423 yen, and for the first half of 1924 at 36,352,932 yen. The average exchange value of the yen during these three periods was $0.478037, $0.485845, and $0.425606, respectively. The marked increase in the importation of crude oil, which has risen from 4,157,000 gallons in 1920 to 47,180,000 in 1923 and to 34,591,000 during the first half of 1924, is to be attributed to the decreasing production of the Japanese petroleum fields and the resultant demand of the refineries for crude petroleum to meet the greater consumption of petroleum products. A lower import tariff for crude petroleum is also a factor in influencing the growing importation. The gasoline imports have quadrupled since 1920, when 6,106,000 gallons were received, against 12,552,000 during the first half of 1924. The increased use of automobiles and other internal-combustion engines is the principal cause of this larger demand. Of the above quantity imported in 1924 the Netherlands East Indies supplied 7,299,000 gallons, and 5,233,000 gallons were credited to the United States. The item "Other oil" imported, which is largely lubricating oil, although some Diesel and neutral oils are also included, increased from 35,278,000 pounds (lubricating oil approximates 7 pounds to the gallon) to 68,235,000 pounds in the first half of 1924. Three-fourths of the lubricating oil used in Japan is produced there, but the better quality lubricants are imported in continually increasing quantities, as high-grade machinery becomes more widely used in that country. These oils are bought largely from the United States.

MILLIONS REPRESENTED IN JOHN D.'S GOLF GAME

ORMOND BEACH, Fla., Feb. 14.—A goodly slice of the wealth of the United States was represented here in a golf match when four of the most wealthy men in the country teed off in a team match over the Ormond course. John D. Rockefeller, Sr., teamed with Agnew T. Dice, president of the Pennsylvania & Reading Railroad, aginst George F. Baker, New York financier and philanthropist, and Edward E. Loomis, president of the Lehigh Valley Railroad.



A Profitable Resolution for 1925

Try North American Car Leasing Service to find out why so many shippers prefer it. Investigate the completeness of the fleet—the perfect condition of the cars—the bulk and loaded-car storage facilities. . . . . Write today for details.

NORTH AMERICAN CAR CO.
327 S. LaSalle St., Chicago

Southwestern Office
Petroleum Bldg, Tulsa

North American car-repair service is prompt, reasonable in cost and always efficient.

162

O'Brien Structural Steel Derricks

Why You Should Buy Them

Built of the same material as bridges and skyscrapers. No material lighter than one-quarter inch. Riveted double splice joint. Furnished in any size desired. Re-inforcing legs for light derricks

O'Brien derricks sold for continual use.

O'Brien Steel Construction Company
Washington, Penna.
Rig Equipment Company, Sand Springs, Okla.

Have You A Problem?

If your particular problem is one which involves breakdowns occurring with annoying frequency—replacements involving expense and loss of time—a downward trend of the production curve with an upward impulse in the costs—then you are the producer to whom we want to talk.

The HOUGH line of pumping specialties is composed of certain sturdy, dependable, accurately designed and executed items which take care of every detail of pumping in an adequate manner and one eminently satisfactory both to production and purse.

Ask your dealer to show you the line—STEELEX and BRONZEX Balls and Seats, HOUGH Seamless Steel Working Barrels, HOUGH Plunger Working Barrels, LEWIS Plunger Liner, (Working Barrels), HOUGH Extension Lower Valve fitted with *oversize* STEELEX Ball and Seat.

Our catalog is yours for the asking.

THE CHARLES N. HOUGH MFG. CO.
Franklin, Penna.

"Products that cut down your underground overhead"

METERS

FOR MEASURING PETROLEUM AND ITS LIQUID PRODUCTS

A positive displacement, oscillating piston design, never equaled for *lasting* accuracy.

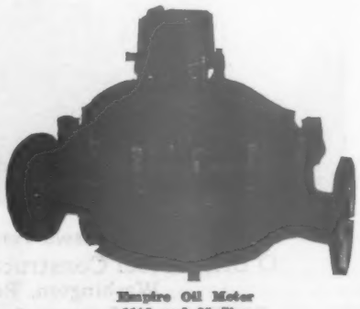
The EMPIRE

We have been making EMPIRE meters for forty years. They are being used with highest success by important Oil Companies in every part of the country. No other meter can touch them for general all around excellence in this line of work.

Made in all sizes, ⅝" to 6" and for a wide range of pressures.

Send for Circular 110-O

NATIONAL METER CO.
299 Broadway
New York
Chicago Boston
Cincinnati Atlanta
San Francisco
Los Angeles



Empire Oil Meter
1½" and 2" Size

Osage Sale Action Shows Government Grasps Oil Problem

By Charles E. Kern

WASHINGTON, D. C., Feb. 16.—That the Federal Oil Conservation Board is really grasping the problem of handling petroleum industry in a way to bring about the economic reforms approved by everyone in or out of the industry, was shown when Secretary Hubert Work, of the Interior Department, chairman of the board, addressed a letter to the chairman of the Senate and House committees on Indian affairs, recommending legislation which should put an end to the reckless drilling of Indian oil lands at times when the market is flooded with petroleum products. This reform legislation is directed toward the lands of the Osage Indians.

The present laws makes mandatory the leasing of these oil lands regardless of the contemporary wisdom of producing oil. It not only floods the market with oil when there is no demand for it but it disregards the duty of the Federal Government toward its Indian wards by administering these Indian estates in a way to prevent giving to the Indian wards the advantage that would flow to them by adopting wise business methods.

In these letters Mr. Work recommended amendment of the law allowing the Interior Department to suspend or extend the statutory requirements, arbitrarily fixing the time of leasing for a period not exceeding two years. This discriminatory power to be lodged in the Secretary of the Interior was asked in a bill introduced in the last Congress but it failed of passage. A continuation of the evils brought about by mandatory drilling regardless of the market needs has accentuated the need for this legisation. The effort being made to curb private owners from wasteful drilling now calls attention to the faulty administration by the Government. Some students of this question are reminding the Government, as The Oil and Gas Journal has frequently done editorially, that it should set an example and teach others by its own practices instead of by mere precepts.

Chairman Work's Attitude

In his letter to the chairman of these committees, Secretary Work has called attention to these mandatory offers of these Indian drilling leases approximating 100,000 acres annually without regard to the existing economic conditions in the industry. The proposed amendment makes provision empowering the secretary to reduce the area to be offered or to suspend entirely the offering of leases for two years at any one time, when in his judgment there is an overproduction of oil or inadequate prices prevail to such an extent as to make such action to the interest of the Indians. He urges the chairmen of these committees to bring this matter to the attention of the committees at an early date.

In part the secretary's letter follows:

"At the date of the passage of the act of March 3, 1921, there were approximately 1,000,000 acres of land in the Osage Reservation unleased for oil, and in order to comply with this law approximately 100,000 acres must be offered for lease annually irrespective of the economic conditions of the oil industry or the necessities of the Indians.

"Reasonable and orderly development of the oil resources of these lands in such a way and at such times as to supply need for the oil, and to secure to the Indians advantageous bonuses and royalties, requires the modification of the arbitrary provisions of the law described and the vesting of some discretion in the department. Forced development is equally disadvantageous to the Indians, the oil producers and the oil industry.

"It is useless to attempt measures for the conservation and orderly development of the oil resources of the country with mandatory provisions of law forcing a disregard of the best interests of all, in-

It Belongs To You

THROUGH the Oil and Gas Journal you and thousands of others keep in touch with every activity of the great Petroleum Industry.

As the "Journal" leads in everything it is natural that it should have the biggest petroleum publication classified section in the world.

It has been helping the men in the entire industry for years. For that reason they have confidence in it, and know what Classified advertising in the "Journal" pays.

There are any number of ways in which you can benefit from the Classified Wants Section. By reading it every week you may find a bargain or opportunity that will help you.

You can use it to buy or sell equipment, royalties, leases, production, or service; it may help you to get a better position, drill a well or locate a good salesman.

There is no limit to the uses to which you may put the Classified Wants Section. It's really your section, because subscribers furnish the "business news" for it.

Whenever you want to buy or sell ANYTHING use the Classified Wants Section of your "Journal." It will help you.

The Oil and Gas Journal

Classified Wants Section "Biggest in America"

Increase Your Production
Shoot Your Wells

Call any of these men and have your well shot by an expert using the best material.

OKLAHOMA

Tulsa Office—2-6743.
Garage—8776.
D. A. Koons—2-6284.
W. H. Swartz—7441.
J. A. Balcam—7441.
Willis Hill—7889.
C. C. Eshelman—2-4864.
BARTLESVILLE—Robt. Camblin, 21.
DRUMRIGHT—Chas. Thiret, 424.
CLEVELAND—Gary Young, 154.
OKMULGEE—George Eba, 654.
THREE SANDS—W. F. Knobe, 826-F22.
WEBB CITY—Robt. Woods, 26. (BURBANK)
CROMWELL, OKLA.—R. C. Woods, Phone No. 53.
STROUD, OKLA.—Gary Young.

TEXAS

BRECKENRIDGE — Roy Richardson, 127.
RANGER—J. F. Tennyson, 126.
GORMAN—P. W. Burdette, 159.
COLORADO, TEXAS—James Dailey, Phone 125.

KANSAS

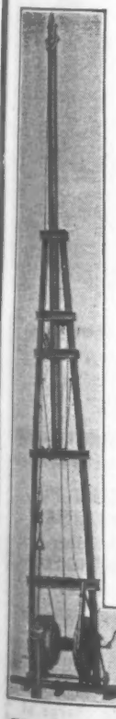
EUREKA—L. R. Hyer, Phone 503.

We also operate stations at Bowling Green, Glasgow and Owensboro, Ky.

The Eastern Torpedo of Ohio Co.
611 First National Bank Bldg.
Tulsa, Okla.

The Iron Boss

Pulling Machines
MAXIMUM STRENGTH
MINIMUM WEIGHT
DOUBLE OR SINGLE BRAKE



Mounted on Two or Four Wheel Trucks

We also Manufacture the Improved Wood Boss, made in four sizes, either 2 or 4 wheel trucks, soft laid guy lines on all machines, guy line chains, double or single brakes. A size for each territory, the lightest and easiest operated machines on the market. Fully guaranteed.

For sale by

All Supply Stores, or Write us for descriptive literature and further information.

The Boss Mfg. & Supply Co.
Van Buren, Indiana. U. S. A.

cluding the Indians and the general public."

Checks on Prices

While this legislation will, if enacted halt the wasteful production of oil it cannot greatly increase the prices of products of petroleum. In the first place the Secretary of the Interior would have discretionary power to lease the Indian lands when in his judgment the market made such action of advantage to the Indian, and in the vague possibility that that action should not be taken unless conditions warranted it there would soon be a flood of oil from without the country. There would be nothing for the public to fear on the score of oppressive prices. Vast production is now shut in in Mexico to be released as soon as market conditions in the United States should invite it. This oil would come in free of duty and if prices should make this market attractive South American production would be speeded up to meet it. No other great industry is so carefully guarded against price increases as is that of petroleum. Always on the free list, a flood of foreign oil would respond to any important market change.

The technical committee of the Board over which Director George Otis Smith of the Geological Survey presides, steadily continues its program. Instead of making one great catch of all information available on the subject of petroleum by embodying every feature it may have in mind in a single questionnaire, the committee is planning to address letters of limited scope to the specialists in the industry by which it is hoped all the different subjects upon which information is desired will be covered. The work of a recent session was directed toward the framing of a questionnaire for refining men who have been brought face to face with problems upon which information is desired. Some of these questionnaires will be addressed to petroleum engineers, some to pipe line men on the subject of underground waste that takes place in the production branch of the business.

Seeking Best Advice

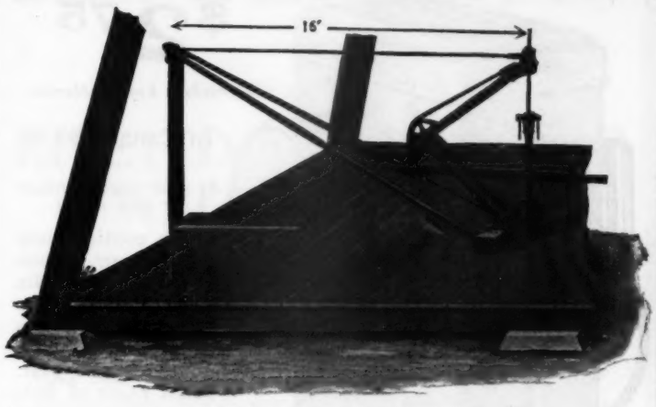
It will be seen that by this method not only the administrative officers of oil companies are brought directly into this investigation but the men who do the work and come into direct contact with oil problems are also being sought for their opinions. The United States Bureau of Mines, the Bureau of Standards the Geological Survey and Bureau of Foreign and Domestic Commerce have been called upon by the technical committee of the Board to supply names of technical men in the oil industry and it is largely the men on these lists that will receive the several questionnaires now being formulated. One thing is being stressed by the Board and the technical committee in private interviews. That is the fact that no one is overlooked with any object of limiting the scope of this investigation. Some refiners and technical men in the industry have not in any way had their names brought to the attention of these Government bureaus that are relied upon largely to supply names to receive the questionnaires. Any one outside of these bureaus who will send in additional names will find that his service in that respect is greatly appreciated.

Director George Otis Smith has brought to the oil board much valuable experience he obtained as a member of the Coal Commission. When the coal industry was being investigated Mr. Smith discovered that many executives and technical men engrossed in the work-a-day problems that they were obliged to attend to in the course of a busy day had never given thought to some of the questions that the investigators were particularly anxious to know about. When the coal men once directed their attention to these matters through the reception of questionnaires they at once became interested. So it is expected men in the oil industry will be given things to consider foreign to their daily routine of thought although they concern the business of their lives.

Once these several questionnaires have been replied to and are returned to the

(Continued on Page 130)

LIGHTNING
OIL FIELD SUPPLIES
PUMPING POWERS, JACKS, STUFFING BOXES, ETC.



LIGHTNING JACKS

The Jack that takes the place of the Beam Pump

ADVANTAGES:

Simplicity — Lateral Adjustment
Wide Range of Adjustment — Simple to Install
Special Oiling Features — More Oil Pumped

Longest stroke without use of Multiplier

Oil Field Supply Department

KANSAS CITY HAY PRESS CO., Kansas City Mo.

Let Longyear diamond drill contractors *core drill* your oil structure
Consult us on your drilling problems
E. J. Longyear Company
Minneapolis, Minnesota, U.S.A.

DELTA

NO. 10 HAND LANTERN

$2.75

Complete Less Batteries

In Canada $3.70

At your supply house or sent direct

Burns continuously by the hour. Runs on two common No. 6 dry cells. One pair of batteries lasts from five months to one year. Takes place of dangerous oil, gas and other unsafe lights. Throws powerful light 400 to 500 feet. No danger of fire. Safe anywhere.

Delta Electric Company

Factory and General Offices: 110 Delta Block, Marion, Ind.

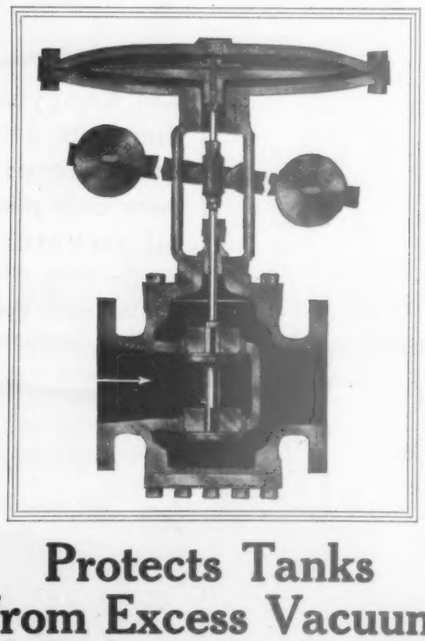
Standard Makers of Electric Lanterns, Auto Spotlights, Auto Ash Receivers, Motorcycle Spotlights, Bicycle Spotlights and Lamps, Radio Head-Phones, Flashlights and Flashlight Batteries

New York City Export Dept. 30 Water St.

Faucette-Huston Co. Chattanooga, Tenn.

San Francisco Sanford Bros. 311 Minna St.

FISHER VACUUM VALVE NO. 88



Protects Tanks from Excess Vacuum

The Fisher Vacuum Valve Type 88 gives absolute protection when collecting vapors from storage tanks. Automatic in operation —always dependable. Bulletin 1502 explains —send today for your copy.

THE FISHER GOVERNOR CO.

Dependable Specialties

365 Fisher Ave. Marshalltown, Iowa

Rapid Growth of Use Of Motors in China And Gasoline Trade

The increasing use of motor cars and trucks in China during the past 10 years has resulted in the steady growth of the gasoline trade, reports United States Trade Commissioner G. C. Howard, Shanghai. The position of the United States has varied, but its average share during the 10-year period from 1914 to 1923, inclusive, has been 28 per cent. In addition, it is estimated that 50 per cent of the imports from Hongkong consist of American gasoline.

Gasoline is imported from the United States in tins and drums ranging in capacity from 5 to 50 gallons. From Sumatra and Java it is brought by tank steamers, stored in bulk and tinned locally. Case goods and cargo in drums are usually stored in "dangerous cargo" warehouses at treaty ports, or in the warehouses of the importing companies, and distribution is effected from the principal ports of importation, either by the vessels of the importer or by coastwise and river boats operated by various steamship companies.

The bulk of the gasoline trade is carried on directly between the importing oil companies and large users and retailers, such as garages and taxi companies. Since a great majority of the automobiles are located in treaty ports, where conditions closely resemble those obtaining in the United States, American methods of distribution and advertising are used. Filling stations are maintained at garages and also by individual oil companies, each asking the same prices. Visible pumps are in general use at filling stations.

The participation of the various countries, by comparative years, is shown in the following table:

Chinese Imports of Gasoline, Benzine, Naphtha and Similar Products

(In thousands of gallons)

Sources—	1914	1917	1920	1923
Hongkong	55	37	147	282
Singapore	430	579	462	1,026
Netherlands Indies.	...	99	705	2,826
Russia and Siberia.	14	5	131	17
Korea	1	3	1	2
Japan (including Formosa)	25	241	640	249
United States including Hawaii	298	199	568	1,953
Philippines	...	31	....	....
French Indo-China.	...	....	2	6
Other countries.	...	....	....	4
Total	823	1,194	2,656	6,365

The value of total imports rose from $144,050 in 1914 to $574,740 in 1917, $2,141,480 in 1920, and $3,112,000 in 1923.

Gasoline imported from the Netherlands, East Indies, Singapore, Straits Settlements and the vicinity, is handled by a British company acting as selling agents for the Royal Dutch-Shell Co., which, owing to proximity to the market, is in a position to do the largest share of the trade.

Automobiles are the greatest and practically the only users of gasoline in China. Motor boats and stationary engines generally require it only for starting, as kerosene and fuel oil are far cheaper. Practically all such engines are equipped with kerosene carburetors. The growth of the gasoline trade, therefore, depends, at present, on the progress of good roads in China, and, hence, the further development of the use of automobiles.

DEATH OF NELSON FAREL

OIL CITY, Pa., Feb. 14.—Nelson Farel aged 82 years, a pioneer oil man, died at his home in Titusville, Pa., following a stroke. He was born at Fredonia, N. Y., May 5, 1842. In the early 50's his father purchased a farm near the present Shamburg church. Later the father purchased land further toward Plumer. On this farm, the Farel farm, was drilled the famous Noble gusher. Early in youth Nelson Farel became interested in the oil business and followed it the remainder of his life. He operated leases in the local fields, at Pioneer and Petroleum Center and was interested in other fields at a disance. William J. Sterrett, of Tulsa, Okla., is a nephew.

Edward Valves for Oil Refineries

Designed From Experience

EDWARD valves are designed and constructed to withstand peak pressures and extreme emergencies possible in all refineries. They were designed by refinery engineers who knew your problems and your requirements.

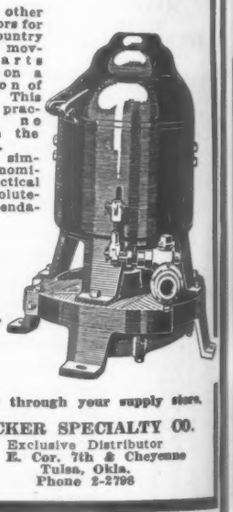
EDWARD valves are fully guaranteed for satisfactory, efficient operation.

THE EDWARD VALVE & MANUFACTURING CO
EAST CHICAGO, INDIANA

THE "FROST VERTICAL" TURBINE GENERATOR

"Spins Like a Top"

Unlike other generators for oil country use, the moving parts float on a cushion of steam. This means practically no wear on the bearings. It is simple, economical, practical and absolutely dependable.



Price $250 f.o.b. Augusta, Kansas

Order through your supply store.

BECKER SPECIALTY CO.
Exclusive Distributor
N. E. Cor. 7th & Cheyenne
Tulsa, Okla.
Phone 2-2796

PETROLEUM TECHNICAL BUREAU
L. C. Smith Building
SEATTLE, WASHINGTON

The New Field in Washington
Information on request

We maintain a Geological and Field Department in charge of experienced executives

Used Cable Tool Equipment

One large lot of miscellaneous cable tool equipment for sale cheap. Will sell all or part. Stored, and guaranteed in excellent condition. For complete list and particulars about location address:

A. L. Edsell
Louisiana Oil Refining Corporation
Shreveport, Louisiana

ARMSTRONG
TWIN JAW
CHAIN PIPE WRENCH

Points of Excellence

Extra large master bolt.

Alloy steel shackle links.

Two bolt fastening.

Extra large bearing of Jaw on Bar.

Spreading of jaws prevented by bolt directly below chain socket.

Chain guides aid in adjusting chain. Chain and end bar protected by chain guide.

PROOF TESTED

ARMSTRONG BROS. TOOL CO.
330 No. Francisco Ave.
CHICAGO, U. S. A.
Write for free catalog

Jos. A. Lugar & Co.
Oil Investments
Financing, Engineering Reports and Appraisals
60 Wall Street New York

JOSEPH L. ADLER
CONSULTING GEOLOGIST
DENVER, COLO.
1115 First National Bank Bldg.

Woman Who Saw Drake Well Come in Dies in Bradford

BRADFORD, Pa., Feb. 14.—With the death at her home on Howard Street on Wednesday of Mrs. Maggie Irish, at the age of 91 years, another of the small group of people who were present that memorable day—August 29, 1859, when oil was "struck" at the first well drilled near Titusville by Col. Edwin L. Drake—passed away.

Mrs. Irish is credited with being the first person to actually "recover" oil in the Pennsylvania fields for it was she who sopped up the petroleum from the ground saturated with oil as it flowed from the well. For this purpose she used a woolen blanket.

Mrs. Irish was the daughter of William Smith who made the tools and drilled the Drake well. Her brother, Sam Smith, now living in Titusville, is the only survivor of the group that worked at the Drake well. He assisted his father in the drilling. Mrs. Smith, mother of the local woman, was at the well during the drilling, preparing meals for her husband and other workers.

CASINGHEAD IS HELD PART OF PETROLEUM

NEW ORLEANS, La., Feb. 14.—The United States Court of Appeals here reversed judgment and remanded for trial in the Northern District of Texas the suit of T. J. Gilbreath against the States Oil Corp., seeking a royalty on all casinghead gas and gasoline taken from oil wells leased by him to the defendant corporation.

The case was originally brought at Eastland, Texas. Gilbreath contended he should be paid a royalty of 25 per cent on all casinghead gas or gasoline taken from the wells if it were found he did not have title to the product, which was not named in the lease. In case the court should find he did not have title and should not award him the royalty asked, he asked for judgment of a one-eighth royalty on the ground that the court would hold the product to be oil taken from the well.

"Our conclusion is that casinghead gas or gasoline must be considered a part of oil since it partakes of the nature of that substance rather than what is known as natural gas," the opinion, written by Judge Dawkins, said. "It makes no difference that it is brought up in the form of vapor or extracted by artificial means. It forms the most important part of petroleum oil, and as such the lessee should be required to pay therefor."

A royalty of one-eighth was set by the opinion as the proper return to Gilbreath, whose suit sought an accounting. The case will go back to the Texas court for trial on its merits.

ARKANSAS DECISION ON FRANCHISE TAXES

LITTLE ROCK, Ark., Feb. 14.—A franchise tax imposed in Arkansas on corporations is collectible from corporations that have a capital stock of no par value, the Supreme Court of that State held recently in passing on an appeal made by the Margay Oil Corp. and the Enfisco Oil Corp. The court decided that for taxation purposes, but for no other purposes, shares of no par value stock should be invested with a value of $25 each.

"The effect of the statute is simply to provide a definite method for fixing the franchise tax, and unless it is found it is confiscatory in its effect or results in a method whereby the tax is imposed upon property outside of the State, or is a burden upon interstate commerce, it is not open to attack," the court held. "The statute applies equally to all corporations organized on the same basis, both domestic and foreign, that is to say corporations with no par value stock."

TULSA
Boiler & Machinery Co.

Builders and Erectors of

RIVETED AND ELECTRIC WELDED TANKS

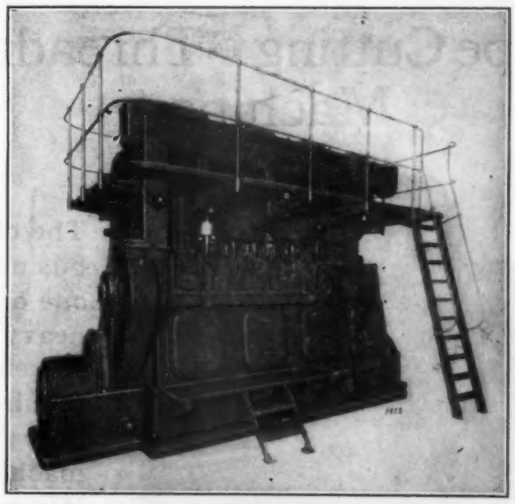
Manufacturers of

GASOLINE PLANT AND REFINERY EQUIPMENT

SHOPS LOCATED AT
WEST TULSA

P. O. Address
Box 1963, Tulsa

Phones
33000 and 9919



Vertical Diesel (Solid Injection) Oil Engines up to 1,000 H. P.

DE LA VERGNE
DIESEL OIL ENGINES

without air compressors
Thirty years experience in oil engine manufacture
330,000 horse power in operation
The Cheapest Dependable Power
Send for Bulletins

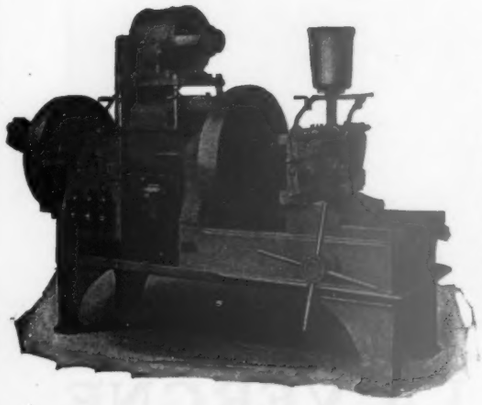
De La Vergne Machine Company
920 East 138th St., New York, N. Y.
Also Manufacturers of Ice Making and Refrigerating Machines

The Fulton Duplex Sensitive Vacuum Regulator

Where it is desirable to maintain atmospheric pressure on a system discharging gases to a line, under light pressure, we have especially designed this Regulator to serve. It acts as a safeguard when used in the vapor lines connected to storage tanks, for the recovery of gases, the purpose being to prevent the pulling of a vacuum. Every gas man who has not yet considered the working principles of this efficient Regulator is urged to write for a copy of our catalogue. All technical information is listed along with prices, etc.

Chaplin-Fulton Mfg. Co.
28-36 Penn Ave., Pittsburgh, Pa.

Pipe Cutting and Threading Machinery



The oil business is one of heavy duty therefore requires heavy duty machines. We have them.

Sizes up to and including 24"

Belt, Motor or Steam Engine Driven
Also
Equipped for Gasoline Engine Drive

THE COX & SONS COMPANY
BRIDGETON, NEW JERSEY
Business Established 1868

Domestic Gasoline Consumption, 1925, 8,600,000,000 Gals.

By L. M. Fanning

Based on the automobile outlook, domestic consumption of gasoline in 1925 will approximate 8,600,000,000 gallons, compared with the estimated consumption in 1924 of 7,800,000,000 gallons, an increase of 800,000,000 gallons or, roughly, 10 per cent.

This calculation is made practically on the same basis as one made by The Oil and Gas Journal early last year estimating 1924 domestic gasoline requirements. At that time it was figured that probable domestic consumption of gasoline in 1924 would be 7,800,000,000 gallons, an increase of about 17 per cent over 1923. Home demand through the 11 months of 1924, according to the United States Bureau of Mines, was 7,106,000,000 gallons, and estimating December consumption at 690,000,000 gallons, the apparent total for the year virtually coincides with the Journal's pronosticated figure.

Early last year indications pointed to a record automobile production approaching 5,000,000 cars, but conditions by the end of the first quarter changed and lack of buying caused manufacturers to revise their schedules downward. Under the circumstances estimates of that year's probable output varied considerably, and in applying these estimates to probable gasoline consumption it was necessary to arrive at maximum and minimum car production figures. The estimated maximum was 5,000,000 cars and the estimated minimum, 3,500,000 cars. An analysis of these figures, applied to car registration statistics, indicating maximum domestic gasoline consumption of 8,228,000,000 gallons and a minimum consumption of 7,732,800,000 gallons.

10 Per Cent Increase

Preliminary figures show actual motor car production in 1924 totaling 3,650,000 or slightly higher than the minimum estimate. Automobile authorities are not widely apart in their estimates of production for 1925. The most conservative estimates place production about even with last year's, while no estimates run higher than 4,000,000 cars. On the basis of the opinions of these authorities, it is reasonable to conclude that probable production will be about 3,700,000 cars, and, in view of the closeness of the estimates, it is not necessary to work out maximum and minimum gasoline requirements based on automotive prospects.

Stated in tabular form, probable domestic gasoline consumption in 1924 compares as follows:

	1924 Estimated Gallons	1925 Probable Gallons
Total	7,800,000,000	8,600,000,000
Increase over preceding year	1,115,000,000	800,000,000
Per cent increase	17	10

In estimating the gasoline requirements for 1925 it is well to point out that probably 80 per cent or more of the total gasoline used in this country is consumed by motor vehicles. Variables in the total gasoline figures and in the automobile registration figures tend to offset each other so that for purposes of estimation they permit of conjunction. The 1925 estimate is obtained by applying the automobile production estimate to the registration figure, deducting for cars probably scrapped and applying average consumption per car to the estimated total registration. The indicated motor vehicle production and registration figures for 1925 compare as follows:

	1924 Actual	1925 Probable
Cars produced	2,650,000	3,750,000
Cars registered end year	17,730,000	19,050,000

The records of the past seven years indicate that in each year where automobile production showed a notable gain, the registration figures at the end of the year took up less of the gain in proportion, than for the years where production showed a falling off. In other words, many persons already having cars, bought new ones, and turned in or scrapped their old cars. This meant increased production with no correspond-

BAKER CASING SHOE CO.
Box 264 F Huntington Park Sta. LOS ANGELES, CALIF., and Box 239 F COALINGA, CALIF.
MANUFACTURERS AND DEALERS
Oil Well Specialties for Advanced Methods Practical and Dependable

BAKER
Anchor Wall Packers
Baker Casing Shoes
Bridge Builders
Cement Retainers
Cement Plugs
Clean-Out Bailers
Dump Bailers
Die Nipples Water
Die Collars Tight
Gas Traps
Hinged Spiders
Heaving Plugs
Pitman Ends
Plain Casing Shoes
Regular Hook Wall Packers
Release Hook Wall Packers
Rotary Bits Baker Type
Rotary Hole Guides
Rotary Shoes
Rotary Tool Joints
Rotary Wall Hooks
Split Shoe Guides

All Supply Houses or Direct

VENEZUELA OIL MAPS
Detailed Maps of
Lake Maracaibo Basin Region
Prices on Application
Compania Cartografica Venezolana
25 Broadway, New York, Room 951

WESTERN BANK SUPPLY CO.
Manufacturing Stationers
High-Grade Office Furniture
Filing Cabinets—Safes
Log Books Township Plats - All Standard Forms
Lithographing Engraving
Embossing Printing
"THE HOUSE OF QUALITY"
217 West Main St. OKLAHOMA CITY
4th and Boston TULSA, OKLA.

Capital Abstract & Realty Co.
W. S. Bell L. B. Norton
J. F. Patterson
Okmulgee, Okla.

DAWSON TOWEL SUPPLY
Aprons, Towels, Jackets for Rent
Towel Service for Office $1.50 Mo.
Phone 9985 Tulsa, Okla.

Dickey-Ashby-Fountain Co.
General Insurance
Derricks, Tanks and Contents Insured
1114 Atlas Life Bldg., Tulsa, Okla.

GEO. W. HENRY, Printer
"Better Printing"
Phone 2-0238
510 S. Elgin Tulsa, Okla.

LAFE SPEER ABSTRACT CO.
General Abstractors
J. A. Boyd, Pres. and Mgr.
11 S. Park St. Sapulpa, Okla.

SAND SPRINGS WATER CO.
Pure Spring Water
Distilled
Phone 3-0106 Tulsa, Okla.

Place your order for Ice with the TULSA ICE CO.
3-0012, 4 N. Detroit, Tulsa, Okla.

Northern Oil Information Bureau
Shelby, Montana
Complete weekly drilling and operating report of Kevin-Sunburst field mailed to any address, $10 for four reports. Maps and logs for sale. Best of references.
We maintain a geological, land and field departments, all in expert hands

NEW OLNEY DISTRICT MAP
JUST OUT
Covers an area in Archer, Young, Throckmorton and Baylor Counties, Texas, approximately 21 miles east and west and 13½ miles north and south and includes the Swastika, Harmel, Ragle, Carey and Peters pools. Scale, 2000 feet 1 inch. On cloth, $7.50; paper, $4.50.
Write for catalog of other maps.
HEYDRICK MAPPING CO.
Wichita Falls, Texas

Kesselman & Co.
Manufacturers of
Drilling and Fishing Tools
for Oil, Gas and Artesian Wells.
Parkersburg, W. Va., Butler, Pa.

Structure Drilling
Contractors With
The Diamond Core Drill
Wire or write us your wants.
Diamond Drilling & Exploration Co.
Pittsburgh, Pa.

HARRY F. WRIGHT
GEOLOGIST
Geological Examinations
Valuations for Tax and Financing
304 So. Cheyenne TULSA

I SPECIALIZE IN OIL WELL
PATENTS
Geo. H. Myers, 503 Petroleum Bldg., Tulsa. 25 yrs oil field technical associate. Prompt service. Reasonable fees.
I. G. QUESADA, Reg. Patent Atty., Barrister Bldg., Washington

WRITE FOR OUR FREE BOOK ON
PATENTS
MUNN & CO.
Woolworth Building New York
Scientific American Bldg., Washington, D. C.
Tower Building Chicago, Ill.
Hobart Building San Francisco, Cal.

PATENTS OBTAINED FOR INVENTORS
JACK A. SCHLEY
U.S. PATENT ATTORNEY
305 INTERURBAN BLDG., DALLAS

ing increase in the number of cars registered. On the other hand, when conditions were not so good and automobile production was curtailed, persons with cars were not buying new ones and the greater part of the new production, instead of going into replacements was going into the hands of persons formerly not having cars.

These conclusions are arrived at by comparison of production and registration figures. They indicate that in years where big production gains have been made, from 7 to 9 per cent of the preceding year's registered cars are scrapped and in years of large production declines, only from 2 per cent to 4 per cent of the preceding year's registered cars pass out of the picture.

Every year shows a substantial increase in production of automobiles except 1918, 1921, and 1924, which show losses compared with the preceding year. However, considering the annual production, the biggest proportionate gains in registration were made in 1918 and 1921. The figures indicate that only 2 per cent of the cars registered in 1917 were scrapped in 1918 and that only 4 per cent of the cars registered in 1920 were scrapped in 1921. In 1924, however, it is indicated that close to 11 per cent of the old cars were scrapped.

In the estimate made early last year, it was figured that probably 9 per cent of the cars registered at the end of 1923 would be scrapped in 1924. In the estimate of 19,050,000 cars registered at the end of 1925, it is assumed that probably 10 per cent of the cars now registered will pass out of the picture in 1925.

Average Consumption

The indicated average gasoline consumption per motor vehicle registered has averaged around 450 gallons during the past seven years. In 1924 it was 459 gallons per car. The average of 450 gallons has been used in estimating 1925 gasoline requirements.

The 509 gallons consumption per car in 1918 can be attributed in part to war conditions, when cars in operation were being put to maximum use. The lowest indicated consumption per car, 432 gallons, was in 1921. During that year hard times were experienced and automobile production curtailed as also the use of individual cars. However, during recent years the improvement in engines has been a decided factor in reducing actual consumption of gasoline per car and still, consumption per car has been increasing during the past three years. This would indicate that improved roads and increased essential use of motor vehicles is bringing about a higher average annual consumption despite greater mileage per gallon.

Estimates of gasoline consumption on the basis of automotive probabilities are by no means infallible. Weather conditions have a great deal to do with gasoline consumption. There is little doubt but that unfavorable weather early in 1924 held down gasoline demand abnormally. The consumption for the year increased 17 per cent, but during the first quarter the gain over the corresponding period in 1923 was only 6 per cent. While the indicated gain of 10 per cent for 1925 may not seem great, it, in conjunction with the expected substantial increase in gasoline exports, forecasts generally healthy conditions so far as actual demand is concerned. The indicated domestic consumption of 8,600,000,000 gallons for 1925 is more than double that of 1920. Comparison with previous years is shown as follows:

	Domestic Consumption Gallons	Increase Gallons	Increase Pct.
1918	3,129,266,347		
1919	3,434,812,486	305,546,139	10
1920	4,250,696,163	815,883,611	24
1921	4,516,027,256	265,331,093	6
1922	5,372,085,042	856,057,786	20
1923	6,685,035,280	1,312,950,238	22
1924	7,800,000,000	1,115,000,000	17
1925	8,600,000,000	800,000,000	10

ANNUAL BANQUET MARCH 5

The annual banquet of the California Chamber of Mines and Oil will be held in Los Angeles, Cal., on March 5. The committee in charge of the affair includes R. A. Sperry, chairman; W. R. Guiberson, F. F. Hill, W. B. Blodget and William Reinhart.

Rugged Simplicity—
BRISTOL Instruments
reveal this unfailing character of American Greatness

In its mechanical products, as well as in its men, America places its approval most positively on those that do the work dependably, no matter what adverse conditions may prevail.

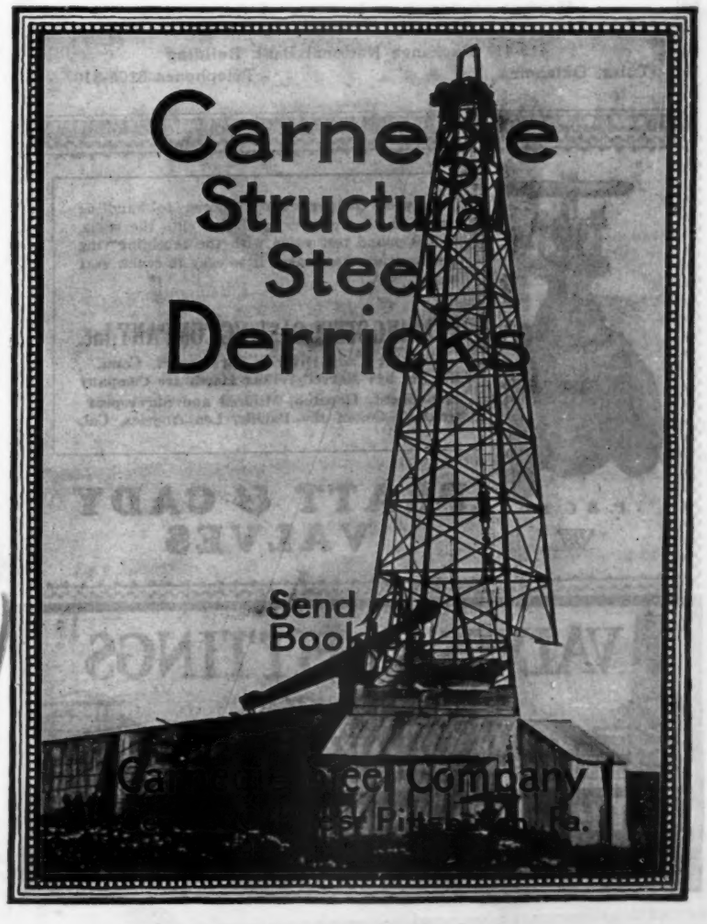
Bristol's instruments are world-famed for uniting precision with a ruggedness and simplicity that puts break-downs and maintenance expense right down to the practically irreducible minimum.

Engineers in refinery, field, and pipe line work have learned from plenty of experience that Bristol instruments are the most reliable and sturdy for recording measurements of pressure, temperature, liquid level, motion and electricity.

Full details of Bristol instrument capacity for serving you will be supplied gladly, without obligation, by the Bristol office nearest you.

THE BRISTOL COMPANY, Waterbury, Conn.

Branch Offices:
Boston New York Pittsburgh Detroit Chicago St. Louis San Francisco



DO YOU Export, Import, or Coastwise ship Petroleum Products? Refine or Top? Market Fuel Oil?

WOULD YOU Be interested in a site at tidewater for Refinery? Tank Farm Acreage? Low Realty Values? Low Taxes?

All available at Port of Texas City, on Galveston Bay.

Address

TEXAS CITY TERMINAL RAILWAY COMPANY

GEO. M. DENT
General Manager
TEXAS CITY, TEXAS

F. W. PARKER
Traffic Manager
TEXAS CITY, TEXAS

"Following the dissolution of the partnership of W. O. Ligon Company

W. L. CLARK
Certified Public Accountant

formerly in charge of the Tax Department of W. O. Ligon Company announces his association with

WILLIAM O. LIGON, JR.
Certified Public Accountant
Member of American Institute of Accountants

413-417 Exchange National Bank Building
Tulsa, Oklahoma Telephones 8106-8107

P. & C. 147

This valve is particularly suited to handling crude oil that carries sand and cuts the seats. A 350 pound test valve with the retaining ring construction that makes it so easy to renew seat rings.

READING STEEL CASTING COMPANY, Inc.
Pratt & Cady Division, Bridgeport, Conn.
Stocked by: Norvell-Wilder Hardware Company
Beaumont, Houston, Mildred and Shreveport
Grinnell Co. of the Pacific, Los Angeles, Cal.

PRATT & CADY VALVES

VALVES and FITTINGS *for Every* **Oil Country Service**

THE KELLY & JONES CO.
WORKS - GREENSBURG PENNA.
BRANCH STORES AND OFFICES: NEW YORK - PITTSBURGH - CHICAGO - CINCINNATI - BUFFALO - ST. LOUIS - SAN FRANCISCO

Drilling in Ecuador; Railroad, Pipe Line And Refinery Ready

At the sixth annual meeting of the Anglo-Ecuadorian Oilfields, Ltd., held in London, the chairman, Lord Forres, said it had been expected the railway would be completed about April. It had taken six months longer and was only finished in November. Trains are now running to the camp.

"Up to the present," he said, "it has not been practicable to drill on anything but a modest scale, and we have mainly been engaged in carrying down the wells which we had undertaken to a depth which will explore the oil sands and give us information. For example, No. 6, which has passed through one or two oil sands, has now reached a depth of 3,924 feet, and is still drilling. It has about 3,200 feet of oil in the hole. No. 4 which has been producing for over a year, at June 30 last averaged about 40 bbls. a day, the depth of the well being 3,037 feet. As the production had somewhat diminished from earlier figures, it was decided to continue drilling. On November 13, when at 3,126 feet, it commenced flowing at the rate of about 150 bbls. per day. All the indications for the productivity of our territory continue favorable. There is, so far as yet experienced, only one important geological difference between the experience at Santa Elena and at Lobitos, which difference consists of a hardness of some of the strata through which the wells have to be drilled. This makes progress slower, and involves a greater wear of drills. Of 10 wells so far undertaken, 8 have got oil. One has been temporarily abandoned owing to difficulties, and one has not yet reached the oil sands. The production of oil during the year was 6,235 tons—not a large quantity, but satisfactory when it is remembered that our attention was devoted to equipping the field, rather than to drilling for oil, and that the wells were partially shut in owing to lack of tankage.

"As to progress made, in addition to the completion of the railway, we have laid an oil pipe line from the field to the port of La Libertad and equipped it with pumps and gathering tanks. One 5,000-ton tank and one 3,000-ton tank have been erected at the port, and a small quantity of oil has been sent down and shipped for local use to small craft at the end of the pier. Material for three other tanks has arrived at the port, and erection is proceeding. The first 1,750 feet of the underset pipe line has been successfully laid and the second section is now ready to launch. This is a considerable but essential undertaking, as large tank steamers cannot approach the pier owing to the shallowness of the bay.

In view of the completion of the railway and consequent improvements of transport, six more steel drilling rigs have been ordered, the first two of which have been shipped. In addition, we have shipped a rig and accessories for rotary drilling.

"We have added a case-making and canning factory in order to place the products of the refinery on the market in the usual packages. The refinery itself has worked successfully, and the company's refined products, which are mainly petrol and kerosene, have proved satisfactory to local consumers. The refinery was to some extent experimental. It was large enough as a venture, but is not adequate to supply the whole local demand in Euador. We have now additional plant on order with which we expect to be able to supply all the local requirements. The board's anticipations have been borne out in practice, both as regards percentage and high quality of the refined products.

"The camp has continued to grow. The climate is good and the health of our staff is excellent. The field manager was home on leave recently, and has returned via the United States, visiting oil fields both in the Southwest and in California, where he was brought into touch with the latest methods and appliances.

"Owing to inadequacy and inefficiency

W. G. MATTESON
CONSULTING GEOLOGIST
Specialist examinations and appraisals Mid-Continent and Gulf Coast Oil Properties
814 Texas State Bank Bldg., Fort Worth, Texas
Box 471, G. P. O., New York City

F. JULIUS FOHS
OIL GEOLOGIST
1220 Kirby Bldg., Dallas, Tex.
First Natl. Bank Bldg., Tulsa, Okla. and 60 Broadway, New York
Cables: Fohsoil, Bentley & Mo'Roll Codes
No professional work undertaken

William H. Foster W. A. Reiter
FOSTER & REITER
CONSULTING GEOLOGISTS
19th Floor, Magnolia Bldg., Dallas
Atlas Life Bldg., Tulsa

WALTER STALDER
OIL GEOLOGIST
Crocker Bldg.
SAN FRANCISCO, CALIF.

FRANK C. GREENE
CONSULTING GEOLOGIST
Exchange Natl. Bank Bldg.
Tulsa, Okla.
Office Phone 2-4519
Residence Phone 3516

V. H. McNUTT
CONSULTING GEOLOGIST AND APPRAISER
Specializing in Northern Oklahoma and Southern Kansas Fields
TULSA, OKLA.
Rooms 404-405 Commercial Bldg.

C. W. WASHBURNE
GEOLOGIST
2 Rector Street New York

E. J. LONGYEAR CO.
MINING ENGINEERS AND GEOLOGISTS
Diamond Core Drill Manufacturers
Diamond Drilling Contractors
MINNEAPOLIS, MINN.

EDWIN B. HOPKINS
CONSULTING GEOLOGIST
35 Broadway
NEW YORK

W. L. GOMORY
CHEMICAL ENGINEER
Consulting Petroleum Technologist
INVENTOR GOMORY CRACKING PROCESS
Licenses Solicited
Refinery Design
Peoples Gas Building Chicago

JOHN B. KERR
PETROLEUM GEOLOGIST
Phone Garfield 4734
601 BALBOA BLDG.
SAN FRANCISCO, CALIF.

F. B. Porter, B. S., Ch. E., President
R. H. Fash, B. S., Vice President
THE FORT WORTH LABORATORIES
Field gas testing. Analyses of oil field refinery, gas, minerals and oil
[illegible] Monroe St., Fort Worth, Texas

JOHN L. RICH
PETROLEUM GEOLOGIST
Special service in tracing of "shoestring" oil and gas pools
OTTAWA, KANSAS

L. G. Huntley Stirling Huntley
HUNTLEY & HUNTLEY
PETROLEUM GEOLOGISTS AND ENGINEERS
Frick Building, PITTSBURGH, PA.

FREDERICK G. CLAPP
Consulting Geologist and Petroleum Engineer
30 Church St., New York City

William C. Marshall
PETROLEUM GEOLOGIST AND ENGINEER
1124 Pacific Mutual Bldg.
Los Angeles, Calif.

Robert H. Wood Virgil O. Wood
WOOD & WOOD
GEOLOGISTS AND PETROLEUM ENGINEERS
Phone 2-1725
302 Commercial Bldg.
TULSA, OKLA.

CARL B. ANDERSON
GEOLOGIST AND PETROLEUM ENGINEER
804 Kennedy Bldg.
TULSA, OKLA.

CHARLES T. KIRK
CONSULTING GEOLOGIST
American and Foreign Fields
Phones 2-2821—2-9504
Suite 523 Mayo Bldg.
TULSA, OKLA.

Appraisals Investigations
SAMUEL J. CAUDILL
PETROLEUM ENGINEERS
TAX COUNSELLORS
Tulsa 1614 Atlas Bldg. Los Angeles 433 Security Bldg.

Wilbur E. Brown G. Thomsen, Jr.
BROWN & THOMSEN
GEOLOGISTS
419 West Grand Ave.
OKLAHOMA CITY, OKLA.

H. H. MESSIMER
MACHINE MADE TANK TABLES
ABSOLUTE ACCURACY
P. O. Box 257 104 Mid-Co Bldg.
Phone 2-4908—Tulsa, Okla.

ROBERT W. CLARK
CONSULTING GEOLOGIST AND APPRAISER
Depletion and Reserves for Income Tax
317 Commerce Bldg.
OKMULGEE, OKLA.

of native labor, we have not made as rapid progress during the 12 months as we had expected, but the progress made is substantial."

CONSTANT REFINING CO. SUCCEEDS CONSTANTIN

The Constant Refining Co., with Pat Malloy of Tulsa as its president, has been formed as a result of the reorganization of the old Constantin Oil & Gas Co., and the Constantin Refining Co., which have been operated under a receivership since March 29, 1923. The financing has not yet been completed and until this is done no definite statement in regard to the policy of the company or the operation of the refineries at Devol, Okla., and West Tulsa can be made by the new officials. The reorganization, however, is expected to be consummated within a short time.

The new company is equipped to engage in all branches of the business since it now owns and will operate approximately 4,800 acres of oil and gas producing properties in Oklahoma, Kansas, Arkansas, Louisiana and Texas; two refineries; 1,085 tank cars, and 15 filling stations and warehouses situated in and about Tulsa.

On December 8, 1924, the properties of the Constantin Refining Co., located in the State of Oklahoma were bought at public auction by the Bondholders' Protective Committee. At a receivership sale held in El Dorado, Ark., on February 5, the committee purchased for $449,000 the properties of the Constantin Oil & Gas Co. in that State, consisting of 4,800 acres of leases with 20 producing wells and a daily average production of approximately 750 bbls. Last Saturday, the same interests purchased the properties of the Constantin Oil & Gas Co., within the State of Oklahoma. Immediately after the purchase the new company was formed and Pat Malloy was offered and accepted the presidency and active management at the first meeting of the board of directors.

CALIFORNIA-JERSEY CONTRACT

LOS ANGELES, Cal., Feb. 14.—Jacques Weinberger, chairman executive committee of California Petroleum Corp., says the company's production is running around 36,000 bbls. daily. He looks for much better earnings this year than last since the company will obtain the full benefit of its refinery facilities this year. With revision of the Standard Oil Co. of New Jersey 36,000,000-bbl. contract last July, which became effective January 1, the company is fulfilling its contract at California rather than Eastern prices as originally stipulated. This agreement also provides substitution of tops and fuel oil for part of shipments, and recent completion of another unit of company's topping plant at harbor makes this possible.

DIRECTORS REELECTED

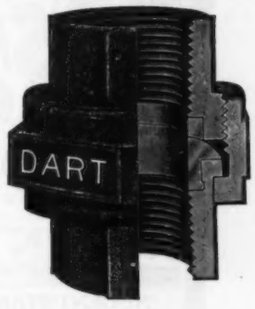
HOUSTON, Tex., Feb. 14.—At the annual meeting of the stockholders of the Mirando Oil Co. held at Laredo, the directors were reelected as follows: C. Schott, T. C. Mann, O W Killiam, A. E. Gates, W. T. Killiam, C. T. Schlemmer, Robert Hinant, Beorge Behlen and C. G. Merrell.

The directors elected the following officers: President, C. Schott; vice president, A. E. Gates; secretary-treasurer, O. W. Killiam; assistant secretary W. T. Killiam.

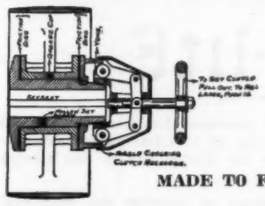
MISSOURI'S DEEPEST TEST

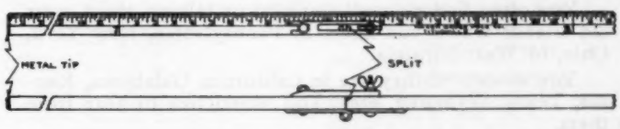
RICH HILL, Mo., Feb. 14.—The test well of the Rich Hill Oil Co. has reached a depth of 3,369 feet, and the oil showing in the cuttings for the last 75 feet is reported encouraging. The well is on the Philbrick farm, 3½ miles southeast of this city, and was spudded June 9, 1924. It is the deepest test in Missouri. F. A. Strickland, of southern Bates County, is president and W. W. Jamison, cashier of the F. & M. Bank of this city, secretary.

STEEL
for Immediate Shipment from Stock
Bars, Plates, Rivets, Tool Steel Shapes, Sheets, Bolts, Welding Rods, Structurals, Tubes, Wire, Concrete Reinforcing, Rails, Pipe, Turnbuckles, Small Tools, Machine Tools, etc.
Write for Ryerson Journal and Stock List
JOSEPH T. RYERSON & SON INC.
CHICAGO ST. LOUIS CINCINNATI
TULSA OFFICE—418 ATLAS LIFE BLDG.
HOUSTON OFFICE—220 MAIN ST.
DETROIT BUFFALO NEW YORK

DART UNIONS and FLANGES
Two Bronze Seats
May we send you sample to try on your most troublesome line? It is absolutely free. Write today for catalogue "O."


E. M. Dart Mfg. Co., Providence, R. I.
The Fairbanks Co.,—Distributors

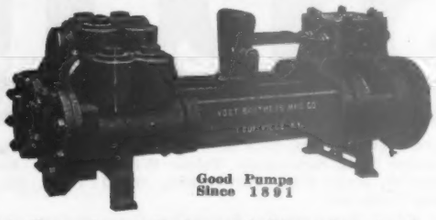
HAVANA
DOUBLE GRIP FRICTION CLUTCH PULLEY

Here is a strong, durable, double grip friction clutch pulley that is easily attached (without aid of skilled mechanic) and has a reputation for service.
Notice in the illustration how strong Havana pulleys are made—they last a lifetime.
MADE TO FIT ALL KEROSENE AND GASOLINE ENGINES
Write for prices and catalog. Don't buy until you learn more about the Havana. Sold by leading jobbers everywhere.
HAVANA MFG., CO.
117 N. Pear St. HAVANA, ILL.

GAUGE POLES
Any Length For Oil Measurements


"MARSH-JOINT"
For sale by oil country supply houses or furnished promptly by the factory at Titusville, Pa.
Correspondence Solicited
MARSH GAUGE POLE COMPANY
TITUSVILLE, PA

THE VOGT BROTHERS OIL PUMP

FOR 600 LBS. WORKING PRESSURE



Good Pumps Since 1891

Our complete line makes us the largest builders of pumps in the south.

VOGT BROTHERS MFG. CO.

(NATIONAL FOUNDRY & MACHINE CO.)

LOUISVILLE, KENTUCKY

U. S. A.

NS Specializing in "LICKING TROUBLE"

NUGENT NS STEEL CASTINGS

NUGENT STEEL CASTINGS COMPANY

3100 South Wood St., Chicago

Tret-O-lite

Reg. U. S. Patent Off.

PROCESS PATENTED. The Barnickel processes for treatment of cut oil and other petroleum emulsions by the use of chemical agents are protected by valid process patents issued by the United States and foreign countries.

The purchaser of TRET-O-LITE is licensed to practice the Barnickel process to the extent permitted by the quantity of TRET-O-LITE purchased. He is not licensed to use any other chemical covered by the Barnickel patents, either alone or with TRET-O-LITE.

WM. S. BARNICKEL & CO.

St. Louis, Mo.

"Your Old Friends"

You often find yourself thinking or talking about your old friends whom you knew in Pennsylvania, New York, Ohio, or West Virginia.

You wonder if they are in California, Oklahoma, Kansas, Texas, Wyoming, etc. You would like to hear from them.

Your friends read the Classified Section every week, thus giving you a good chance to get in touch with them.

A small advertisement, asking for their whereabouts, etc., would put you in touch with them.

Try to get in touch with them this week.

THE OIL AND GAS JOURNAL

OSAGE SALE ACTION SHOWS GOVERNMENT GRASPS OIL PROBLEM

(Continued from Page 123)

Oil Board's office here thy will be distributed to assistants especially qualified to handle each subject under discussion, in order to have the information classified, studied and placed in form to be readily handled by the technical committee and later by the Oil Board.

The technical committee is endeavoring to give as much of a town-meeting aspect to this investigation as possible. They are looking for information and want it from whatever source it may come. The additional questionnaires will be out during the coming week or 10 days and then it can be seen just what information is being sought. It is believed they will prove of benefit to many people who reply to them by directing their attention to many details of the oil business that may have been overlooked.

The Federal Oil Conservation Board has been given a headquarters room in the Interior Department Building on the same floor and not far from the offices of the Secretary of the Interior. It is here that the Board, the technical committee and the secretary and assistants assemble when occasion requires them to get together. Charles W. Waterman, counsel of the Oil Board, also makes his headquarters there and he comes daily to read the answer that have come in in response to questionnaires sent out to oil companies and individual refiners, producers and distributors. Mr. Waterman is making an excellent impression upon the callers with whom he comes in contact. A good listener and a candid talker, he makes a good mixer. He shows an open mind for the great subject that has been given him to keep straight so far as legal entanglements are concerned. He is not a man of isms nor of prejudice against everything that smacks of newness.

Not to Hamper Industry

There have been some misgivings in the minds of some oil men as to whether this Federal Oil Conservation Board might not seek to hamper the oil industry in its free operation in ways that industries generally are not interferred with at all. Mr. Waterman does not look for that sort of action. As a lawyer he has dropped into Washington as a student of petroleum and its intricate problems and probably he never had a client that received more careful attention than he is giving the problems of petroleum. He has never been counsel for an oil company and he has not been actively engaged in the oil business, but in a broad way is very thoroughly familiar with the basic problems that underlie the industry.

CALIFORNIA STANDARD ADDS NEW RESERVOIR

LOS ANGELES, Cal., Feb. 14.—The Standard Oil Co.'s reservoir and tank farm at El Segundo, the largest storage plant in southern California, and one of the largest in the State, is to be increased by the addition of a 3,000,000-bbl. reservoir. The Standard already has one reservoir at El Segundo with a capacity of 3,000,000 bbls., which when constructed in 1923, was one of the largest in the country.

Construction work on the new reservoir has been started. The reservoir will be lined with concrete, and will be covered. It is south of Rosecrans Avenue, and west of the Inglewood-Redondo Road.

JOHN D. ARCHBOLD'S SLOGAN

The story is told that when John D. Archbold was a young man, just starting in the oil industry and traveling about the country a great deal, he would sign his name on the hotel registers and add the phrase "$4 a barrel for oil." Some leaders of the petroleum industry seem to be inclined to believe that Mr. Archbold's far-off prediction may come true this year. The opinion is widely expressed, says the New York Times, that before the year is over a great deal will be heard about a "prospective shortage" of oil.

BROKAW, DIXON, GARNER & McKEE

GEOLOGISTS

PETROLEUM ENGINEERS

Examinations, Appraisals

Estimates of Oil Reserves

120 Broadway New York

Amil A. Anderson Payton W. Anderson

ANDERSON & ANDERSON

Mining Engineers and Petroleum Geologists

304 Bitting Building

Wichita, Kansas

Telephone Market 3337

ROBERT W. HUNT CO.

Inspecting and Testing Engineers

Inspection of Oil Line Pipe, Oil Well Casing, Tanks, Drums and Barrels

Inspection During Manufacture

Resident Inspectors at Pipe and Steel Mills

2200 Insurance Exchg., Chicago

H. H. HOOD

PETROLEUM ENGINEER AND GEOLOGIST

Explorations, Surveys, Appraisals, Audits, Consultations, Management

1510 Chemical Bldg., St. Louis, Mo.

1839 McCormick Bldg., Chicago

IRVINE E. STEWART

GEOLOGIST

Great Falls, Montana

421 Ford Building

Denver, Colorado

926 Patterson Building

HEATH M. ROBINSON

GEOLOGIST

804 American Exchange Bank Bldg.

DALLAS, TEXAS

Telephone X2733

GEO. C. MATSON

GEOLOGIST

2-2049—Phones—2-1533

408 Cosden Bldg. Tulsa, Okla.

Frank A. Herald John M. Herald

HERALD BROTHERS

GEOLOGISTS

PETROLEUM ENGINEERS

303 Cosden Bldg. Phone 2-3711

TULSA, OKLAHOMA

JAMES O. LEWIS

PETROLEUM ENIGNEER AND GEOLOGIST

734 Kennedy Bldg. Tulsa, Okla.

DEWITT T. RING

PETROLEUM GEOLOGIST

El Dorado, Ark.

917 New Daniel Bldg. Tulsa, Okla.

H. B. GOODRICH

PETROLEUM GEOLOGIST-ENGINEER

Phone 2-9268—2-8228

1007 Kennedy Building Tulsa, Okla.

Detailed Operations in Eastern Fields for January 1925

EASTERN FIELDS

Summary of Wells Completed

Fields—	Comp.	Prod.	Dry	Gas
Allegany	12	16	0	0
Bradford	69	156	1	0
Middle Field	1	0	0	1
Venango-Clarion	22	32	2	1
Butler-Armstrong	11	16	3	2
Southwest Pennsylvania	20	15	6	9
West Virginia	93	314	14	50
Southeast Ohio	53	778	19	7
Total January	291	1,327	45	70
Total December	363	1,643	57	76
Difference	72	316	12	6

Summary of Work Under Way

Fields—	Rigs	Drg.	Ttl.
Allegany	9	13	22
Bradford	28	74	102
Middle Field	1	4	5
Venango-Clarion	5	16	21
Butler-Armstrong	6	12	18
Southwest Pennsylvania	5	37	42
West Virginia	70	134	204
Southeast Ohio	40	79	119
Total January	164	369	533
Total December	194	394	588
Difference	30	25	55

ALLEGANY FIELD

WELLS COMPLETED

Duke, First Nat. Bank of Olean et al 1
Fanton, E. M. Ketchner 1
Kinley Oil, W. J. Weller et al wtr
Kinley Oil, W. J .Weller et al 1
Murphy, Sherwood & Murphy 1
Fee, Empire Ltd. et al 1
Fee, J. B. Gray 1
Fee, Turner Oil Corp. 2
Fee, T. J. Gilligan et al 2
Fee, A. H. McDonald Heirs 3
Childs, Neil K. Wilson wtr
Fee, Sawyer & Wasson 3

Wells completed 12
Production 16
Water 2

BRADFORD FIELD

Pittenger, South Penn Oil 1
Howard, Pressure Oil 7
Doubleday, Pressure Oil 2
Melvin, Stephens & Taff 4
Duke, Gridiron Oil 2
Borden, Raff & Schwab 1
Borden, T. B. Wilson 2
Baldwin, Forest Oil 3
Porter, Forest Oil 3
Noble, Forest Oil 2
Irvine, C. E. Potter 2
Burns, Arthur Yahn 4
Baldwin, C. B. Kervin 2
Sill, Hope Oil 2
Hodge, South Penn Oil 1
Pratt, Korner Bros. 2
Campbell, F. W. Kalkins et al 2
Ekas, R. C. Lloyd 1
Chamberlain, Sngerland & Co. 2
Farr, J. H. Gibson 1
Bingham, Murphy & Ostrander 2
Lafferty, Hazelwood Oil 1
Melvin, South Penn 1
Roggenbaum, J. Roggenbaum 1
Lafferty, George & George 1
Lafferty, Whitehead & Co. 2
Keller, P. Keller 1
Cochrane, Nichols Run Oil 121 2
Harmon & Ramsbottom, Grace Ramsbottom 15 1
Bing. 431, J. A. Hooper 2 1
Bing. 391, Geo. W. Bovaird 73 4
Bing. 370, R. M. & James George 15 6
Moody, Grant & Mohan 58 wtr
Vincent Heirs, Howard & McCallum 85 2
Vincent Heirs, S. H. Elder et al 3
Grant, Burgess, Love, Wright et al 2
Bing. 370, C. L. Wann et al 36 2
Riddell Est., South Penn Oil 43 2
Weston, Jr., Tr., South Penn Oil 78 2
Weston, Jr., Tr., South Penn Oil 79 2
Weston, Jr., Tr., South Penn Oil 80 2
Fee, South Penn Oil 72 1
Fee, Dunsmore et al 4 1
Fee, E. L. & F. J. Shippey 4 2
Armstrong et al, South Penn Oil 17 2
Pranchot, J. B. Walters et al 13 5
McCreary & Sherrick, Murphy & Tibbits 1
Fee, Sabra C. George 1
Bing. 150, South Penn Oil 56 5
Fee, W. C. Kennedy Co. 41 3
Bing. 184, Assoicated Prod. 335 4
Bing. 184, Associated Prod. 337 3
Fee, W. C. Kennedy Co. 42 2
Bing. 150, South Penn Oil 55 5
Bing. Associated Prod. 307 3
Bing. Associated Prod. 309 4
Bing., Associated Prod. 312 4
Bing., Associated Prod. 313 3
Fee, South Penn Oil wtr
Bing. 190, South Penn Oil 77 3
Fee, Hazelwood & Kennedy No. 3, 66 2
Bing. 405, South Penn Oil 2
Bing. 423, South Penn Oil 2
Bing. 580, Associated Prod. 335 1
Bingham, H. P. McKalip et al 6
Bingham, J. L. Yerdon 2
Burgess, Wright et al 1
Bingham, Andrus & MacDowell 2
Melvin, South Penn dry

Wells completed 69
Production 166
Dry 1
Water 2

MIDDLE FIELD

Lot 359, Pennsylvania Gas 863 gas
Jennings, C. E. Carnahan 32 abd

VENANGO-CLARION

Chicago, Gelty & Lowry 8 1
Bakin, C. B. Reeves 16 2
Osborne, C. W. Tracey 24 1
Kern, C. B. Kern 9 2
Nelson, S. C. Sampson 8 1
McCalmont 225 acres, S. P. McCalmont Est. 42 1
McCalmont 225 acres, S. P. McCalmont Est. 43 1
Sayers, Kelly Heirs & Hoffman 8 2
P. & B., Leadenham & Hancox 1 1
Neal, Kelly Heirs 60 1
Kellerman, H. B. Melat 22 1
Kellerman, H. B. Melat 23 1
Plumer, Henderson & Gibb 16 1
Miller, I. N. Liken 3 2
Clarion—
Lewis, Scott, Lewis et al 1 dry
Kahle Heirs, R. D. Shorts et al 1 10
Miller, Miller & Mong 9 1
Gardner, Alum Rock Gas 1 dry
Yingling, L. G. & I. L. Neely 2 gas
Reed Tract, Levi & Co. 2 1
Smathers, Walter Oil & Gas 1 1
Mercer—
Stevinson, Baird, Van Eman et al 12 1

Wells completed 22
Production 32
Dry 2
Gas 1

BUTLER-ARMSTRONG

Campbell, Smith, Burkett et al 1 2
Toggett, D. L. Baird et al 2 2
Ray, Young, Graham et al 3 1
Day Heirs, Hilliard Oil & Gas and McGill 3 1
Wally, Strance et al dry
Evans City Cemetery, W. Peffer & Co. 2
Shepard, American Natural Gas 1 dry
Denny Heirs, Butler Plate Glass 1 gas
Albert, Pittsburgh Co. 1 gas
Wise, E. H. Hutchison 2 dry
Duncan, Meeder, Duncan et al 6 8

Wells completed 11
Production 16
Dry 3
Gas 2

ALLEGANY FIELD

Rigs

Fee, Clyde Jordan.
Kinley Oil, Hungerford & Turner.
Fee, Turner, Cady & Allen.
Fee, A. C. A. Oil.
Fee, Emma F. McEwen.
Fee, L. W. Shaner et al.
Fee, M. J. Crowley et al.
Fee, Turner Oil Corp.
Fee, Sawyer & Wasson.

Wells Drilling

Fee, Empire Gas & Fuel, Ltd.
Coon, Rome Oil.
Fee, Cassius Congden.
Kinley Oil, W. J. Weller et al (two wells).
Cass, F. J. Wilson.
Fee, J. E. LeSuer et al (two wells).
Fee, R. J. Dermitt.
Fee, Henline et al.
Fee, T. J. Gilligan et al.
Fee, T. J. Gilligan et al.
Fee, L. A. Wilson.
Rigs, 9; wells drilling, 13; total, 22.

BRADFORD FIELD

Rigs

D. C. & B., George & Kervin.
Doubleday, Pressure Oil.
Duke, Gridiron Oil (two rigs).
Borden, Raff & Schwab.
Porter, Forest Oil (two rigs).
Lafferty, George & George.
Melvin, South Penn.
Wright, Wright & Johnson.
Zelitf, Carmody & Fessenmyer 9.
Bing. 490, T. H. Kennedy Co. No. 2, 128.
Bing. 370, R. M. & James George 16.
Riddell Est., South Penn Oil 44.
Weston, Jr., Tr., South Penn Oil 82.
Fee, A. W. McCandless & Son 3.
Clugston, Parker Farm Oil 11.
Franchot, D. & P. Oil 23.
Franchot, H. E. Seeley 19.
Clark, Clark & Marsh.
Fee, W. C. Kennedy Co. 45.
Fee, South Penn Oil 35.
Bing., Associated Prod. 311, 314, 316.
Bing. 188, Harris Oil.
Fee, South Penn Oil.
Bing. 554, South Penn Oil.

Wells Drilling

Howard, Pressure Oil.
Duke, Gridiron Oil.
Shepard, South Penn Oil.
Jones, South Penn Oil.
Baldwin, Forest Oil (two wells).
Porter, Forest Oil.
Noble, Forest Oil (two wells).
Burns, Arthur Yahn.
Gelfin, Simpson & Cooper.
Ekas, R. C. Lloyd.
Richardson, Hope Oil (two wells).
Jack, J. & H. M. Jack.
Farr, G. S. Van Vetchen & Son.
Murphy, Forest Oil.
Fee, Skagg Bros.
Fee, L. H. Smith.
Fee, B. M. Mott.
Fee, F. S. Boquin.
Fee, B. Nevin.
Nesselson, Nesselson Bros.
Melvin, South Penn Oil.
Roggenbaum, J. Roggenbaum.
Reserve, McGregor & Grant.
Eaton, Eaton Bros.
Vincent, S. H. Elder & Co.
Emerson, South Penn Oil.
Bingham, J. L. Yerdon.
Lawton, Oil City Trust (two wells).
Bingham, South Penn Oil.
Bingham, Andrus & MacDowell.
Weston, Jr., Tr., South Penn Oil 81.
Fee, W. E. & W. W. Parmenter 27.
Clugston, Parker Farm Oil 11.
Fee, E. A. Potter 2.
Franchot, John Jackson 16.
Fee, Jeutter Bros. 9.
Hellenbrook et al, Jackson et al.
Fee, Mrs. Joseph T. Jones.
Bing. 184, Associated Prod. 336.
Bing. 150, South Penn Oil 57.
Bing. 452, South Penn Oil 51.
Fee, South Penn Oil 34.
Bing. 176, Hazelwood & Kennedy 102.
Fee, W. C. Kennedy Co. 43.
Bing., Associated Prod. 315, 331.
Quintuple Oil, Moore & Bradley.
Phoenix Oil & Kennedy, Holding Oil Corp.
Erie R. R., E. F. Connors 8.
Bing. 410, South Penn Oil.
Bing. 439, South Penn Oil.
Bing. 423, South Penn Oil.
Bing. 554, South Penn Oil.
Bing. 570, South Penn Oil 97.
Bing. 533, South Penn Oil 65, 67.
Bing. 439, South Penn Oil 75.
Bing. 499, South Penn Oil 38.
Bing. 568, Associated Prod. 344.
Bing. 576, South Penn Oil 102, 103.
Bing. 590, Associated Prod. 338.
Bing. 370, C. L. Wann et al 37.
Bing. 388, C. L. Wann et al 45.
Bing. 368, Forest Oil 42.
Bing. 170, Elder Redfield et al 45.
Bing. 490 T. H. Kennedy Co. No. 2, 127.
Larson, M. Shear 1.
Brown, Larson & Krantz 2.
Fee, L. C. McGovern 13.
Rigs, 28; wells drilling, 74; total, 102.

MIDDLE FIELD

Rigs

Osgood, Rembold et al 0.

Wells Drilling

O'Hara, Pequignot & Co. 10.
Bingham, Rocky Grove Oil 11.
Lot 3767, F. J. Moser 24.
Lot 3664, South Penn Oil 38.
Rigs, 1; wells drilling, 4; total, 5.

VENANGO-CLARION

Rigs

Sayers, Kelley Heirs & Horrman 9.
Neal, Kelly Heirs 61.
Clarion—
O'Neill Brothers, D. & H. O'Neill.
O'Neill Brothers, Alum Rock Gas 1.
Amsler, G. C. Shaner et al 1.

Wells Drilling

Henderson, S. Y. Ramage 49.
Eakin, C. B. Reeves 17.
Osborne, C. W. Tracey 25.
Morrison, S. P. McCalmont Est. 1.
McCalmont 225 acres, S. P. McCalmont Est. 44.
Burkhardt, Frank Masterson 13.
P. & B., Leadenham & Hancox 2.
White, Corbett & White 14.
Clarion—
Kahle Heirs, A. D. Shorts et al 2.
Kenemuth, Alum Rock Gas 4.
Switzer, T. B. Swartzfager 1.
Wentling, U. Glass 1.
Rhodes, Hovis, Miller et al 1.
Hoover, Shields & Hoover.
Brenneman, O'Neil & Co.
Mercer—
Drake, Bunny, Gilson et al 4.
Rigs, 5; wells drilling, 16; total, 21.

BUTLER-ARMSTRONG

Rigs

McKinney, Hutchison & Campbell 6.
Boggs Heirs, R. C. & W. V. Binkerd.
Kamerer, Mr. and Mrs. E. R. Kamerer 1.
Shaner & Bellstein, Shaner & Co. 3.
Hickey, Flick & Co. 1.
Wilson Est., E. H. Hutchison 2.

Wells Drilling

Moore, Snow et al.
Johns, I. N. Johns.
Campbell, H. H. Campbell 4.
Bortz, Texas Oil 1.
Delaney, Delaney Bros. 1.
Taylor, Birchbickler Bros. 3.
Huselton, John M. Hicks 21.
McCarren, Lang & Co. 2.
Frazier, Pittsburgh Co. 1.
Luntz, William Burke 1.
Steeb, R. Steeb et al 1.
Cookson, E. H. Hutchison 2.
Rigs, 6; wells drilling, 12; total, 18.

WASHINGTON COUNTY

WELLS COMPLETED

Lutton, Tague, Lutton & Co. 3 5
Mansfield, Tague, Lutton & Co. 2 dry
Munce, Tague, Lutton & Co. 1 dry
Westfall, Bell, Kuhly & Co. 4 gas

ALLEGHENY COUNTY

Miller, Robinson & Co. 1 gas
Sweiger, Walley & Hahn 2 gas
Burke, West Farm O. & G. Co. 2 gas
Bond, G. J. Hurley & Co. 1 3
Clever, M. Clever 1 dry

BEAVER COUNTY

Shane, R B. Abrams 6 2
Kirk, H. K. Dev. Co. 1 1

GREENE COUNTY

Renner, So. P. O. Co. 2 dry
Hastattler, Den. Mar O. & G. Co. 3 5
Stypes, Enterprise O. & G. Co. 1 gas
Sellers, James Null & Co. 1 dry
Lemley, Hope C. & R. & Co. 1 gas
Gump, New Freeport Gas Co. 1 gas
Stockdale, James Null & Co. 1 gas
Brown, Brown O. & G. Co. 4 gas
Baldwin, Charles Sutton & Co. 1 dry

Wells completed 20
Production 15
Dry 6
Gas 9

WASHINGTON COUNTY

Wells Drilling

Thompson, Brown & Conklin 1.
Quail Sisters, Benedum & Trees 1.
Thorn, Robert Hays & Co. 1.
Haslett, Mfrs. L. & H. Co. 1.
Andrew, Mfrs. L. & H. Co. 1.
Croft, N. G. Co. of W. Va. 2.
J. B. Andrew, Carnegie Gas Co. 1.

ALLEGHENY COUNTY

Rigs

McKinney, M. L. Williams 2.
Miller, Robinson & Co. 2.
Lutsinger, Lutsinger & Co. 1.

Wells Drilling

Woodside, So. P. O. Co. 5.
Wallace, Parker & Co. 3.
Hardt, Ferguson & Co. 1.
School Lot, Brooker & Co. 1.
Martin, Martin & Co. 1.

BEAVER COUNTY

Wells Drilling

Carnegie, O. V. T. Co. 1.
Veon, Pittsburgh Parties 1.
Hicks, Black Bros. & Co. 4.

GREENE COUNTY

Rigs

Howard Heirs, Peoples Gas Co. 1.
Cassiday, Carnegie Gas Co. 1.

Wells Drilling

South, Fred Garrison 1.
Fox, People Gas Co. 1.
Lemley, Peoples Gas Co. 2.
Henderson, Carnegie Gas Co. 2.
Wade, C. N. Fox O. & G. Co. 1.
Lemley, Shannon Run O. & G. Co. 1.
McClure, Randall Gas Co. 1.
Ross, Federal Gas Co. 1.
Kent, Peoples Gas Co. 1.
Davis, S. E. McCracken 1.
Renner, Dunmar O. & G. Co. 1.
Shook, Milligan Oil Co. 1.
King, Dunn Mar O. & G. Co. 1.
McGuffie, Enterprise O. & G. Co. 1.
Shoup, Carnegie Gas Co. 1.
Webster, Carnegie Gas Co. 1.
McGreevy, Carnegie Gas Co. 1.
Smith, Mfrs. L. & H. Co. 3.
Boyd, Mfrs. L. & H. Co. 1.
Wolfe Heirs, Mfrs. L. & H. Co. 1.
C. W. Webster, Mfrs. L. & H. Co. 1.
McGempley, Waynesburg Prod. Co. 2.
Rigs, 5; wells drilling, 37; total, 42.

WEST VIRGINIA

WELLS COMPLETED

LEWIS COUNTY

Lawson, Horner Bros. 1 gas

HARRISON COUNTY

Bailey, J. W. Johnson & Son 1 gas
Chieftain Coal Co., Clarksburg L. & H. Co. 1 gas
Bramer, Clarksburgh L. & H. Co. 1 gas
Lee Heirs, Glandes West 1 gas
Stout-Lynch, Eastern Pet. Co. 1 gas

MONONGALIA COUNTY

Tennant, So. P. O. Co. 5 gas
Stattler, Moore-Tex Oil Co. 1 gas

MARION COUNTY

Goodnight, Owens B. & M. Co. 1 gas
Martin, C. A. Snodgrass 1 3
Murray, Carnegie Gas Co. 3 dry
Metz, S. N. Elliott 1 10
Rowand, R. S. Monroe & Co. 1 gas
McDevitt, Mfrs. L. & H. Co. 2 dry

WETZEL & TYLER COUNTIES

Morgan, Gordon Oil Co. 1 dry
Bartrugg, Mfrs. L. & H. Co. 3 gas
Stewart, Helfrich, Lawson & Co. 1 gas
Terry Heirs, Morgan Bros. & Co. 1 gas
Miller, Hope C. & R. Co. 1 gas

MARSHALL COUNTY

Calvert, Mfrs. L. & H. Co. 1 gas
Rine, Mfrs. L. & H. Co. 2 gas
Mason Heirs, St. Josephs O. & G. Co. 2 10
Riley Heirs, Wasmuth & Co. 2 8

DODDRIDGE COUNTY

Tinkle Heirs, Gulf O. & G. Co. 1 gas
Robinson, Hope Gas Co. 1 gas
Ash, D. E. Baker & Co. 1 3
Davis, Hick O. & G. Co. 1 gas
Freeman, Clifton O. & G. Co. 4 75
Shinn, Roy Shinn 1 3
Connelly Heirs, Vanhorn & Stout 1 dry

RITCHIE COUNTY

Goff, Carnegie Gas Co. 2 gas
McDonald Heirs, Braden, Powell & Co. 1 gas
Bartlett, Hope Gas Co. 1 dry
R. W. Goff, Hope Gas Co. 1 3
Frederick, Becerstaff & Co. 1 gas
Summers, Spruce O. & G. Co. 1 gas
Rollins, Hope Gas Co. 1 gas
Prunt, Prunty Oil Co. 1 gas
Lemmon Heirs Tract, Southern Oil Co. 1 1
Heflin, Pittsburgh & W. Va. G. Co. 1 dry
—h .....o(..... ETAOI ETAOI ET
Collins, Hope Gas Co. 1 gas
Hardbarger, J. E. Hardbarger 1 dry
Osborne, Hope Gas Co. 1 dry
Haught, Hope Gas Co. 1 dry
Williamson, J. F. Deem & Co. 4 dry
Jordon, Hope C. & R. Co. 1 5

GILMER COUNTY

Gainer, Hope C. & R. Co. 5 dry
Stalkner, Pittsburgh & W. Va. G. Co. 1 gas
Floyd, Hope Gas Co. 1 gas
Simmons, Oak Bell & Co. 2 gas
Snyder Brothers, Snyder Heirs 1 5

BRAXTON COUNTY

Stump, Pittsburgh & W. Va. Gas Co. 1 gas

WIRT COUNTY

Swisher, Roberts Brothers 19 4

WOOD COUNTY

McAtee, O. E. Grow 6 5
Reed, C. S. Reed 7 1
Muchmeyer, Geo. W. Stout & Co. 1 3
Allman, L. P. Bickle & Son 1 10
West, Dollman & Kingsbury 6 4

PLEASANTS COUNTY

Wagner, Monon Oil Co. 10 3
Wagner, Bottom Oil Co. 2 gas
Parker, A. F. McCullough & Co. 1 15
Dennis, Carder Oil & Gas Co. 2 gas
Noland, Gallaher, Buckley & Co. 6 5
Heflin, Phila. Oil Co. 1 dry
Lamp, G. A. Smith & Co. 1 dry

BOONE COUNTY

Craig, So. P. O. Co. 19 4

CALHOUN COUNTY

Holbert, M. F. Crowley & Co. 1 4
Thomas, Thomas Crowley & Co. 1 1
Yoak, Euclid O. & G. Co. 2 4
Poling, H. C. & R. Co. 1 2

CLAY COUNTY

Koontz, Empire Pet. Co. 2 gas
Samples, Chalmers O. & G. Co. 10 10

LINCOLN COUNTY

Ray, Ray O. & G. Co. 1 gas
Marsh, A. F. Marsh 1 gas
Henderson, W. C. Kingrey 1 gas
Callahan, Columbia G. & E. Co. 1 gas

BOONE COUNTY

L. R. & P. Tract, Pure Oil Co. 14 90
C. R. M. Co., Owens B. & M. Co. 13 gas
Bull Creek L. & C. Co., Owens B. & M. Co. 1 gas
Pryor-Allen, Owens B. & M. Co. 9 gas
Casingham, Owens B. & M. Co. 5 gas

CABELL COUNTY
Johnson, Midway City Gas Co. 1..... gas
Birch, Florence Oil Co. 1..... 2

KANAWHA COUNTY
Walkerson, Weona Oil Co. 1..... gas
Osborne, U. F. G. Co. 1..... gas
Canterberry, U. F. G. Co. 1..... gas
Seabolt, U. F. Go. Co. 1..... gas
Ashley, U. F. G. Co. 1..... gas
Harper, U. F. G. Co. 1..... gas
Witherow, U. F. G. Co. 1..... gas
Vickers, Columbia Carbon Co. 3..... dry
Elk Refining Co., Elk Ref. Co. 2..... gas
Scott, Ohio Fuel Oil Co. 2..... 10

Wells completed 93
Production 314
Dry 14
Gas 7

LEWIS COUNTY
Rigs
Edmonston, Hope Gas Co. 1.
Wells Drilling
Wilson, Pittsburgh & W. Va. G. Co. 1 1.
Haymond, West Fork O. & G. Co. 1.
Burnside Heirs, So. P. O. Co. 1.

HARRISON COUNTY
Wells Drilling
Griffin, Hope Gas Co. 1.
Goodwin, So. P. O. Co. 10.
Lyons, Wolf Penn O. & G. Co. 2.
Lanhan, Delva-Tex Oil Co. 1.
Smith Brothers, Reserve Gas Co. 1.
Lowndes, R. T. Lowndes 1.
Cookman, Lone Star Gas Co. 1.
Young, Grasselli Chem. Co. 1.

PRESTON COUNTY
Wells Drilling
Gordon, Hope Gas Co. 1.

MONONGALIA COUNTY
Rigs
Knutti, Cumimngs & Thomas 1.
Wells Drilling
Price, Mfrs. L. & H. Co. 1.
Wise-Tennant, O. C. Bradley 4.
Tennant 66 acres, So. P. O. Co. 1.
McDermott-Tennant, So. P. O. Co. 1.
Malinda Tennant, So. P. O. Co. 3.
Minor Tennant, Dunn Mar. O. & G. Co. 5.
Varner Heirs, Dunn Mar O. & G. Co. 17.
Thomas Tennant, Clay Dist. Oil Co. 1.
Cowell, Carnegie Gas Co. 1.
L. Tennant, Hope C. & R. Co. 1.
Thomas, Mfrs. L. & H. Co. 5.

MARION COUNTY
Rigs
Ice, Owens B. & M. Co. 2.
Wells Drilling
Fleming Heirs, Morgantown O. & G. Co. 1.
Fleming, Davenport O. & G. Co. 1.
Roby, Hope Gas Co. 1.
Cunningham, Owens B. & M. Co 1.
Davis, Hope Gas Co. 1.
Conaway, Hope Gas Co. 1.
Beaty Heirs, Buffalo Oil Co. 1.
Fluharty, So. P. O. Co. 3.
Hays, Hope C. & R. Co. 6.
Fluharty, Carnegie Gas Co. 1.

WETZEL AND TYLER COUNTIES
Rigs
McGinnis, H. L. Lambert 8.
Wells Drilling
Morgan, Mfrs. L. & H. Co. 4.
Ingram, Hope C. & R. Co. 1.
Allen, Hope C. & R. Co. 1.
Pyle, Hope C. & R. Co. 1.
Lemasters, Hope C. & R. Co. 1.
Gordon, Hope C. & R. Co. 1.
Hixenbaurh Heirs, Mfrs. L. & H. Co. 1.
Milliken Heirs, J. B. Orndoff 1.
Hamilton, Carter Oil Co. 3.
Miller, Hope C. & R. Co. 1.
Allen Heirs, Myers Gas Co. 2.
Mace, Carnegie Gas Co. 1.

MARSHALL COUNTY
Rigs
Marshall County Bank, Mfrs. L. & H. Co. 11.
Antill, Johns Gas Co. 5.
Chaney, Mfrs. L. & H. Co. 1.
Wells Drilling
Keller, Mfrs. L. & H. Co. 4.
Burley Heirs, Mfrs. L. & H. Co. 4.
McCluskey Heirs, Waynesburg Gas Co. 1.
Orum, Campbell & Cole 1.
Schenk, Mfrs. L. & H. Co. 5.
Ramsey, Myers Gas Co. 1.

DODDRIDGE COUNTY
Rigs
Williams, Nay & Williams 1.
Burbridge, W. T. Gribble & Co. 2.
Kelly Heirs, Racoon O. & G. Co. 4.
Roberts, Keystone Oil Co. 4.
Ash, A. Carl 1.
Hudson Heirs, Continental Oil Co. 3.
Wells Drilling
McCoy, Hope Gas Co. 1.
Bates, Bates Oil Co. 1.
Eddy, McIntire Bros. 1.
Smith, Hope C. & R. Co. 2.
Hufford Heirs, Carter Oil Co. 1.
Smith, McCall & Co. 2.
Douglass, Hope C. & R. Co. 1.
F. Douglass, Trainer & Travis 3.
Perrine, Murphy Oil Co. 2.

RITCHIE COUNTY
Rigs
Goff, Hope Gas Co. 1.
Douglass, Hope Gas Co. 1.
A. Goff, Wright Oil Co. 1.
Ehret, Hope Gas Co. 2.
Wilson, E. E. Pope 3.
Tichards, Hope C. & R. Co. 1.
W. Va. Tract, Whitewood Oil Co. 29.
W. Va. Tract, D. C. Reese & Co. 30.
Coplin, Leeson & Zinn 1.
Pope, E. E. Pope 2.
Shaw-Garrison, J. D. Netzer 1.
Reymer, Hope Gas Co. 1.
Deerman, Deerman & Co. 1.
Westfall, Hope Gas Co. 1.
Jackson, Penn Royal Gas Co. 5.
Conaway-Patton, Mellon Bros. 2.
Mullen, Jonn McGinnis 1.
Lambert, H. L. Lambert 1.
John Poonter, H. L. Lambert 1.
Wells Drilling
Maxwell Heirs, Hope Gas Co. 1.
Wright, Louden & Co. 1.
Snodgrass, Louden & Co. 1.
Wass, Carnegie Gas Co. 1.
Allender, Parkersburg O. & G. Co. 1.
Gambrill, E. E. Pope 7.
Howell, Moore & Co. 1.
Rector, J. J. Rector & Bro. 2.
Jones, Coss O. & G. Co. 3.
Mason, Hope Gas Co. 1.
Lewis, Hope Gas Co. 1.
M. Lewis, Hope Gas Co. 1.
Mount, Martin Burke & Son 102.
Haymond Heirs, Barker & Smith 1.
Phillips, Edgar Lynch 1.
Bell, W. A. Clark & Co. 1.
Stanley, Hope C. & R. Co. 1.
Lowther, Penn Royal Oil Co. 2.
McGinnis Heirs, Chalmers O. & G. Co. 16.

GILMER COUNTY
Rigs
Goff, So. P. O. Co. 8.
Hardman, So. P. O. Co. 6, 7.
Ellis, So. P. O. Co. 3.
Bush-Holt, Hope Gas Co. 2.
Bennett, Hope Gas Co. 4.
Richards, Chemical O. & G. Co. 1.
Gill, Hope C. & R. Co. 2.
Wells Drilling
Bennett, Hope Gas Co. 1.
Miller Heirs, C. W. McCall & Co. 3.
Bell, Hope Gas Co. 1.
Stalnaker, Hope C. & R. Co. 2.
Frederick, Hope C. & R. Co. 1.
Meang, Hope C. & R. Co. 1.

BRAXTON COUNTY
Rigs
Gerwig, O. F. O. Co. 1.
Luzader, Star Prod. Co. 1.
Wells Drilling
Fitzpatrick, W. Va. Central Gas Co. 1.

WIRT COUNTY
Rigs
Vandevere, W. C. Patterson 16.
Wells Drilling
Daubenspeck, A. F. Daubenspeck 3.

WOOD COUNTY
Wells Drilling
Stone, W. L. Stephens Oil Co. 3.

PLEASANTS COUNTY
Rigs
Lamp, Neeley & Co. 5.
Wells Drilling
Nowland, White & Casper 1.
Wagner, Momon. Oil Co. 11.
Parker, McCullough Oil Co. 1.
Gale Heirs, Samuels & Gale 9.
Roberts Brothers, G. F. Roberts 3.
Hammett, E. A. Ryan 10.
Hamilton, Carter Oil Co. 1.

ROANE COUNTY
Rigs
Larch, O. F. O. Co. 19.
Burrough, Heck Oil Co. 1.
Brown, Heck Oil Co. 1.
Shepard, Heck Oil Co. 3.
Wells Drilling
Meadows, W. P. Heater 1.
Bartlett, Carter Oil Co. 1.
Young, I. Richardson & Co. 1.

CALHOUN COUNTY
Rigs
Crowley, M. F. Crowley 1.
Dewecse, Hope C. & R. Co. 1.
Stump Heirs, Bickle Bros. 1.
Wells Drilling
Bell, Hope C. & R. Co. 2.
Loudin, Park & Dailey 2.
Plant, Hope C. & R. Co. 1.

JACKSON COUNTY
Rigs
Shafer Heirs, L. C. Young & Co. 1.
Wells Drilling
Skeen, Kentuck Oil Co. 1.
McCoy, Henderson Oil Co. 1.

CLAY COUNTY
Rigs
Goshorn Tract, Shelton G. & O. Co 11.
King Heirs, White Sand Pet. Co. 3.
Phillips, Virginia Gasoline & Oil Co 1.
LINCOLN COUNTY
Rigs
Adkins, Orlando Oil & Gas Co. 3.
Viola Adkins, Superior Gas Co. 1.
Sweetland, Foote O. & G. Co. 1.
Wells Drilling
Walls, Columbia G. & E. Co. 1.
Peck, Foote O. & G. Co. 1.
Scraggs, Roy & McComas 1.
Wiser Adkins, Cambridge Gas Co. 1.
Porter, Laurel Dev. Co. 3.
Sweetland, T. R. Sweetland 2.
Cline, Col. G. & E. Co. 1.
Stowers, Grant Gas Co. 1.
Bays, Commercial Gas Co. 1.
Osborne, Star Gas Co. 2.
Stowers, Carter Oil Co. 1.
Sweetland, Foote O. & G. Co. 1.
Nyda, Cambridge Gas Co. 1.

CABELL COUNTY
Wells Drilling
McCullough, Aetna O. & G. Co. 1.
Hardin, Ohio F. O. Co. 1.
Templeton, Nixon & Co. 1.
Walton, Walton O. & G. Co. 2.
Adkins, Monacil Gas Co. 1.
Swann, Star Pet. Co. 1.

BOONE COUNTY
Rigs
C. R. M. Co., Owens B. & M. Co. 4.
Wells Drilling
Fuel Land Co., Owens B. & M. Co. 1.
Bedford, Owens B. & M. Co. 6.
Cassingham, Owens B. & M. Co. 6.
Smoot, Owens B. & M. Co. 1.
Boone County Poor Farm, Owens B. & M. Co. 2.

KANAWHA COUNTY
Rigs
Reamer-Brown, U. F. G. Co. 1.
Hulings-Cobb, U. F. G. Co. 1.
Jarrett, U. F. G. Co. 1.
Halstead, U. F. G. Co. 1.
Quarrier, Owens B. & M. Co. 5.
Boyd, U. F. G. Co. 1.
Imperial Coal Co., U. F. G. Co. 31.
Roane Land Co., Allengeny O. & G. Co. 2.
Cassingham-Skinner, So. P. O. Co. 2.
Black Bend Coal Co., So. O. P. O. Co. 4.
Wells Drilling
Rollins, U. F. G. Co. 1.
Canterbury, U. F. G. Co. 1.
Bradford, U. F. G. Co. 1, 2.
Thompkins, U. F. G. Co. 1.

LOGAN COUNTY
Wells Drilling
Yawkey-Freeman, So. P. O. Co. 5.

RALEIGH COUNTY
Rigs
Rowland Land Co., Fisher Oil Co. 4.
Rigs, 70; wells drilling, 134; total, 204.

SOUTHEASTERN OHIO
WELLS COMPLETED
MONROE COUNTY
Moore, Carter Oil Co. 1..... 1
Conner, Stoffle & Co. 2..... 1
Johnson, E. L. Yeager, trustee 1..... 10
Bode, Timblin & Co. 10..... 6

PERRY COUNTY
Sunday Creek C. Co., Sunday Creek C. Co. 120 ..... dry
Sunday Creek C. Co., Sunday Creek C. Co. 121 352
Wilkins, Atha Oil Co. 1..... dry

HOCKING COUNTY
Souders, O. F. G. & S. Co. 1..... 80
Ford, Gordon Oil Co. 5..... dry
Aker, Murray City O. & G. Co. 4..... 106

LICKING COUNTY
Hughes, F. M. Rugg & Co. 6..... 4
McKinney, Jones & Reese 8..... 3
Green, Marion Snyder 8..... 4
Smith, Ralph Bros., Inc. 6..... 4
Taylor, W. W. & A. T. Wehrle 8..... 4
Benner, W. W. & A. T. Wehrle 2..... 2
W. W. & A. T. Wehrle, W. W. & A. T. Wehrle 2 30
Romine, Carter Oil Co. 3..... 30

HOLMES COUNTY
Estep, O. F. G. Co. 1..... gas
Shank, East Ohio Gas Co. 3..... gas
Bird, East Ohio Gas Co. 2..... dry
Davenport, Central Ohio Gas Co. 2.... gas
Finney, Central Ohio Gas Co. 1..... 20
Smith, Central Ohio Gas Co. 1..... dry
Barnes, Cline, Echstein 3..... gas
Martin, Cline, Echstein 1..... dry

FAIRFIELD COUNTY
Everett, Nypenno Oil Co. 1..... dry
Meyer, Montana O. & G. Co. 1..... dry

COSHOCTON COUNTY
Williams, Ohio Fuel Gas Co. 1..... dry

ATHENS COUNTY
Whaley, W. I. Sperry, trustee 6..... 20
Rodford, Cross & Co., trustee 4..... 25
Penrod, Townsend O. & G. Co. 4..... gas
Hufford, Fisher O. & G. Co. 2..... 5
Dreschler, Cook O. & G. Co. 1..... 3
Wilks, Athenia O. & G. Co. 1..... 5
Dickens, Miller O. & G. Co. 1..... dry

NOBLE COUNTY
Wilson, Tuttle & Co. 1..... gas
Harper, Cain Devoll Oil Co. 3..... 1
Shaffer, Robinson & Metcalf 3..... 1
Love, Hackett & Metcalf 5..... dry

MORGAN COUNTY
Souders, Sun Oil Co. 2..... 15
Neicewanner, Pure Oil Co. 2..... 15
Congon, Monroe O. & G. Co. 13..... 2

MEIGS COUNTY
Roush, C. W. Eglar 1..... dry
D. Roush, Brocalsia Chem. Co. 1..... dry
Cross, R. G. Gillespie 1..... 5
Williams, Ohio F. Co. 1..... 5
Houndsheldt, Miller & Taylor 1..... dry
Roy Spencer, Pure Oil Co. 2..... 5

MUSKINGUM COUNTY
Ashton, Swingle O. & G. Co. 2..... 2
Finley, Carter Oil Co. 2..... dry
Headley, Mideast Oil Co. 1..... dry
Bainter, Leonard O. & G. Co. 1..... dry

WASHINGTON COUNTY
McAtee, Dennis & Co. 1..... gas
Schenkle, Archer & Co. 1..... 1
Pranter, Earl Stephens & Co. 2..... 2
Schantz, Palmer & Co. 2..... 2
Morganstein, A. J. Schantz & Co. 2.... dry
Wolfort, W. F. Meister & Co. 11..... dry
Hull, S. C. Turner 8..... 1
Driscoll, A. T. Dillon & Co. 32..... 1

JEFFERSON COUNTY
Groves & Co., Boyce & Boyce 2..... 3

BELMONT COUNTY
Buchanan, Hilliard & Co. 21..... dry

Wells completed 63
Production 778
Dry 19
Gas 7

MONROE COUNTY
Wells Drilling
Cline, E. L. Yeager, trustee 1.
Rose, Rose Farm Oil Co. 1.

PERRY COUNTY
Rigs
Trimmer, Ohio Fuel Corp. 5.
Paxton, Holliday O. & G. Co. 3.
Metzger, Trinway O. & G. Co. 1.
Welch, Southern Oil Co. 2.
Denman, Paxton Oil Co. 1.
Pyle, Ohio Gas Co. 1.
Wells Drilling
Grannan, C. L. Bullock & Co. 16.
Lemity, C. H. McCray 8.
Sunday Creek C. Co., John Denman & Son 45.
Green, Carter Oil Co. 1.
Burns Heirs, Edgar Denman & Co. 6.
St. Joseph Literary Society, Regan & Co. 3.
Skinner, Carter Oil Co. 1.

HOCKING COUNTY
Rigs
Aker Heirs, Carter Oil Co. 2.
Johnson, Griffin Prod. Co. 6.
Wells Drilling
Geiger, Midwest O. & G. Co. 1.
H. V. P. Co., Chartiers Oil Co. 193.
Tracey Est., Kachelmacher Est. 15.
Sunday Creek C. Co., Sunday Creek C. Co. 122.
France, Arkansas Fuel Oil Co. 2.
Jacobs, Jacobs Oil Co. 4.

LICKING COUNTY
Rigs
Orr, Midland Oil Co. 2.
Bell, Carter Oil Co. 1.
Watt Heirs, Carter Oil Co. 2.
Hughes, F. M. Rugg & Co. 6.
Tavener, W. W. & A. T. Wehrle 1.
Wells Drilling
Bowers, Whitehill & Co. 3.
Bowser, Midland Oil Co. 3.
Cooperrider, Midland Oil Co. 2.
Stair, E. J. Edmonds & Co. 3.
McKinney, Jones & Reese 9.
Greene, Marion Snyder 9.
Tish, Carter Oil Co. 1.
Stephens, Moore & Adams 7.
Motherspaw, C. E. Saltzgaver 7.
Franks, Detex O. & G. Co. 1.
Derflinger, M. F. Whitehill & Co. 1.
Irwin, Spindler & Co. 2.
Smith, W. W. & A. T. Wehrle 4.

HOLMES COUNTY
Rigs
Connor, East Ohio Gas Co. 5.
Close, East Ohio Gas Co. 1.
Martin, Central Ohio Gas Co. 1.
Davenport, Central Ohio Gas Co. 3.
Smith, Central Ohio Gas 2.
Finney, Central Ohio Gas Co. 1.
Parsons, Rocky River Dev. Co. 2.
Barnes, Ohio Fuel Corp. 4.
Uhl, Ohio Fuel Corp. 2.
Martin, Ohio Fuel Corp. 1.
J. Uhl, East Ohio Gas Co. 4.
Smith, East Ohio Gas Co. 1, 2.
Wells Drilling
Clark, Ohio Fuel Corp. 1.
Jackson, Carter Oil Co. 1.
Herman, Carter Oil Co. 1.
Carpenter, A. L. Harbison & Co. 1.
Purdy, Pure Oil Co. 1.
Miller, Pure Oil Co. 2.
Bell, East Ohio Gas Co. 1.
Patterson, East Ohio Gas Co. 1.
Mackey, East Ohio Gas Co. 2.
Korns, Central Ohio Gas Co. 3.
Bird, Central Ohio Gas Co. 1.
Parsons, Rocky River Dev. Co. 1.
Harford, Ohio Fuel Corp. 1.
Martin, Ohio Fuel Corp. 1.
Troyer, Central Ohio G. Co. 1.
Uhl, East Ohio Gas Co. 3.
Bell, East Ohio Gas Co. 1.
Sterling, East Ohio Gas Co. 2.

KNOX COUNTY
Wells Drilling
Blubaugh, Upham Gas Co. 1.

FAIRFIELD COUNTY
Wells Drilling
Graffis heirs, Flagdale O. & G. Co 15.
Facht, Peach O. & G. Co. 1.
Barnes, Elder, Griggs & Co. 1.
Folk Heirs, Rush Creek O. & G. Co. 2.
Reed-Hyde, Shaw Oil Co. 1.
Miller, Pure Oil Co. 3.
Christ, Sturm & Co. 1.

COSHOCTON COUNTY
Rigs
Wolford, Spindler, Donlan & Co. 4.
McKee, Spindler, Donlan & Co. 4.
Crawford, Pure Oil Co. 7.
Carpenter, Pure Oil Co. 1.
Wells Drilling
Norris, Pure Oil Co. 3.
Shickler, Ohio Fuel Corp. 1.

ATHENS COUNTY
Rigs
Lick Run Coal Co., E. L. Stephens 3.
NOBLE COUNTY
Wells Drilling
Walters, Wash & Noble C. Gas Co. 1.
Westcott, Earl Stephens & Co. 1.
Davis, J. F. Haynes & Co. 1.
Rowland, Wickens & Co. 1.
McWilliams, John Kemp & Co. 1.
Williams, Williams & Clark 2.

MORGAN COUNTY
Rigs
Souders, Sun Oil Co. 4.
Fisher, Pure Oil Co. 1.
Fye, Pure Oil Co. 1.
Wells Drilling
Souders, Sun Oil Co. 3.
Fye, Pure Oil Co. 4.

MEIGS COUNTY
Wells Drilling
Cottral, Brocalsia Chem. Co. 1.
Jivide, W. N. Norris 1.

MUSKINGUM COUNTY
Rigs
Dutro, Carter Oil Co. 2.
Bolin, Mideast Oil Co. 1.
Aschcraft, Pure Oil Co. 3.
Wells Drilling
Shell, Ohio Fuel Co. 1.
O. C. Evans, Local Parties 1.
J. S. Evans, Local Parties 2.

WASHINGTON COUNTY
Rigs
Dischler Heirs, O. S. Reckard & Co. 1.
Dana, O. S. Reckard & Co. 7.
Mendenhall, First National Bank 16.
Wells Drilling
Uppole, F. Goddard & Co. 2.
Erbs, William Huntsman & Co. 2.
Mosier, Mosier & Ellis 4.
Reynolds, Earl Stephens & Co. 1.
Wagner, Louis Bay & Co. 1.
Williams, Embine O. & G. Co. 2.

JEFFERSON COUNTY
Wells Drilling
Cox, W. E. Burns & Co. 3.

BELMONT COUNTY
Wells Drilling
Durigg, N. G. Co. of W. Va. 1.

CARROLL COUNTY
Wells Drilling
Blackledge, N. G. Co. of W. Va. 1.

COLUMBIANA COUNTY
Wells Drilling
Stoffle, Coraopolis S. & T. Co. 14.
Yaggi heirs, Kirk & Dunn Oil Co. 14.
Rigs, 40; wells drilling, 79; total, 119

LIMA FIELD

Summary of Field Operations

	Comp.	Prod.	Dry	Gas	Rigs	Drg.	Tot.
Wood	6	33	0	0	0	4	4
Hancock	2	20	0	0	2	5	7
Allen	3	32	1	0	0	3	3
Auglaize	4	68	0	0	0	6	6
Sandusky	0	0	0	0	0	1	1
Mercer	2	10	0	1	0	6	6
Van Wert	2	0	2	0	0	1	1
Seneca	0	0	0	0	0	1	1
Lucas	0	0	0	0	0	1	1
Ottawa	3	49	0	0	0	3	3
Darke	1	29	0	0	0	2	2
Shelby	2	1	1	0	0	2	2
Hardin	1	5	0	0	0	1	1
Paulding	2	10	0	1	0	1	1
Defiance	0	0	0	0	0	1	1
Crawford	0	0	0	0	0	1	1
Michigan	0	0	0	0	0	2	2
Total Jan.	27	257	4	2	5	43	48
Total Dec.	46	648	6	6	7	49	56
Difference	19	391	2	4	2	1	1

WOOD COUNTY
WELLS COMPLETED
Montgomery—L. Leffingwell, George F. Ryder No. 2, 4 .....
Edmond, Mrs. Sophia Graham 2, 3, 4.

5 ..... abd
Freedom—Byron Brookover, J. Ed. Matzinger 8 5
Plain—Joe Lane, Ladd & Morrison 3.... 3
Middleton—F. H. Speck, Fred H. Speck 5 5
Lake—Emil Brendt, Charles F. Ziesing & Co. 6 10

Wells completed 5
Production 33
Abandoned 4

HANCOCK COUNTY

Eagle—Alice Stauffer, Star & Clark 1 15
Eli Gorby, Dave King, Jr. & Co. 13.. 5
Liberty—J. Newhouse, Ohio Oil 3, 6.... abd
M. Sager, Ohio Oil 18..... abd

Wells completed 2
Production 20
Abandoned 3

ALLEN COUNTY

Spencer—J. R. Walch, Wolf Bros. & Givin Oil 1 2
Chas. Freud, Wayne Oil 1 30
Marion—Mike Rahrig, Dean Oil 1..... dry
Richland—C. Balmer, John L. Balmer 1, 2, 3 ..... abd

Wells completed 3
Production 32
Dry 1
Abandoned 3

AUGLAIZE COUNTY

Moulton—G. R. Julian, Fowler Bros. Pet. 3 15
W. E. Cook, Krupp & Geseichen 4.. 10
Mary Tester, Cliff Blair & Co. 2..... 15
Douchouquet—Fred Presser, Fowler Bros. Pet. 1 28

Wells completed 4
Production 68

SANDUSKY COUNTY

Sandusky—Emma N. Hensel, Ohio Oil 12 ..... abd
William Kiser, Paragon Ref. 1, 3, 6, 7, 8, 10, 11 ..... abd

Abandoned 8

MERCER COUNTY

Gibson—Peter Schmidt, Central West O. & G. 5 10
Washington—Florence heirs, Callahan & Mayhue 1 ..... gas

Wells completed 2
Production 10
Gas 1

VAN WERT COUNTY

Willshire—Elias Sheets, J. H. Harmon & Co. 1 ..... dry
York—Ed. R. Jones, Stelzer & McClure 1 ..... dry

Wells completed 2
Dry 2

OTTAWA COUNTY

Harris—Ross Reynolds, Reynolds Oil 4 1
E. Bushman, Silver Oil 4 8
Clay—Joe Schissler, R. W. Bell 5..... 40

Wells completed 3
Production 49

DARKE COUNTY

Wayne—Margaret Paulus, Lee A. Watson 1 29

SHELBY COUNTY

Cynthian—A. Ellerman, Ellerman Oil 4 1
John Bergman, Lyons & Co. 1..... dry

Wells completed 2
Production 1
Dry 1

HARDIN COUNTY

Marion—Zel McGuffey, McGuffey Oil & Gas 1 5

PAULDING COUNTY

Benton—Mary Stabler, Stanton Isaacs 1 10
John Finan, H. H. Cuppler & Co. 1.. gas

Wells completed 2
Production 10
Gas 1

WOOD COUNTY
Wells Drilling

Freedom—Byron Brookover, J. Ed. Matzinger 9.
Liberty—D. W. Levers, Hulse & Kundtz 3.
Perrysburg—D. Lahy, W. F. Johnson 7, Alex Bears, Lew W. Johnson 5.
Rigs, 0; wells drilling ,4; total, 4.

HANCOCK COUNTY
Rigs

Eagle—J. W. McClellan, S. Porter & Co. 2, 3.

Wells Drilling

Pleasants—J. E. Heers, Bath Township Oil 4.
Eagle—Lem Aurand, Porter & Hovis 15.
Eli Gorby, Dave King, Jr. & Co. 14.
Biglick—D. Chambers, R. Allen 1.
James Cross, Cole Brothers 1.
Rigs, 2; wells drilling, 5; total, 7.

ALLEN COUNTY
Wells Drilling

Spencer & William Sever, W. L. Parmenter 1.
Thomas Youngpeter, W. L. Parmenter 5.
Amanda—Bailey heirs, W. W. Rocks 1.
Rigs, 0; wells drilling, 3; total, 3.

AUGLAIZE COUNTY
Wells Drilling

Moulton—George R. Julian, Fowler Brothers Petroleum 4.
Mary Tester, Cliff Blair & Co. 3.
Douchouquet—Fred Presser, Fowler Brothers Pet. 2.
Salem—W. E. Miller ,Drake Oil 1.
Logan—Charles McPherson, E. C. Loober 1.
Rigs, 0; wells drilling, 5; total, 5.

SANDUSKY COUNTY
Wells Drilling

Jackson—B. J. Rineboldt, B. J. Rineboldt 4.

MERCER COUNTY
Wells Drilling

Gibson—L. Rummell, Delta Oil 2.
H. Leckner, Weibel & McPherson 3.
Butler—John Dues, R. E. Young & Co. 1.
Hopewell—Mary E. Price, June Oil 2.
Washington—Florence Heirs, Callahan & Mayhue 2.
Rigs, 0; wells drilling, 5; total, 5.

VAN WERT COUNTY
Wells Drilling

Jennings—W. C. Shiley, Stanley Oil 1.
Ridge—J. E. Moore, Calvin Neely 2.
Willshire—A. J. Cully, J. H. Harmon 1.
Harrison—S. E. Gorman, Bolyard, Barnett & Co. 2.
Pleasants—M. H. Hoffman, American Engineering 2.
Rigs, 0; wells drilling, 5; total, 5.

SENECA COUNTY
Wells Drilling

Jackson—Mary A. Miller, G. W. Michaels 5.
Clinton—Catherine Akers, Arthur Geyer & Co. 1.
Rigs, 0; wells drilling, 2; total, 2.

LUCAS COUNTY
Wells Drilling

Monclova—William Black, Swan Creek O. & G. 2.

OTTAWA COUNTY
Wells Drilling

Harris—Harmon Minke, The Zorn-Hornung Oil 1.
Ross Reynolds, Reynolds Oil 5.
Ernest Bushman, River Oil 5.
Rigs, 0; wells drilling, 2; total, 2.

DARKE COUNTY
Wells Drilling

Mississinewa—O. L. Black, F. Hunting Clark 1.
Wayne—Margaret Paulus, Lee A. Watson 2.
Rigs, 0; wells drilling ,2; total, 2.

SHELBY COUNTY
Wells Drilling

Cynthian—F. B. Miller, Slagel & Johnson 1. 1.
Laramie—H. Pauls, O. J. McGuigan & Co. 1.
Rigs, 2; wells drilling, 0; total, 2.

HARDIN COUNTY
Wells Drilling

McDonel—John Ward, Attorney Moore Oil 1.
Erwin Hites, Roundhead Oil & Gas 5.
Roundhead—Manuel Hoover, Ohio Oil 1.
Rigs, 0; wells drilling, 3; total, 3.

PAULDING COUNTY
Rigs

Harrison—A. W. Miller, Aetna Drilling 1.
Charles Scitler, Payne Parties 1.
Benton—John D. Lamb, W. J. Wharton & Co. 1.

Wells Drilling

Harrison—C. C. Springer, John T. Schank 1.
Benton—W. L. & E. A. Lentz, D. M. Lipps 1.
Brown—W. H. Patterson, Roger L. Dill & Co. 2.
Rigs, 3; wells drilling, 3; total, 6.

DEFIANCE COUNTY
Wells Drilling

Adams—Adams Township Gas & Oil 1.

CRAWFORD COUNTY
Wells Drilling

Galion—Town Lot, Weed-Hamilton Oil 1.

MICHIGAN

MONROE COUNTY
Wells Drilling

Dundee—Frank Roe, Jackson County Oil & Gas 1.

JACKSON COUNTY
Wells Drilling

Napoleon—Silvers, Jackson County Oil & Gas 1.

CENTRAL OHIO

Summary of Field Operations

	Comp.	Prod.	Dry	Gas	Rigs	Drg.	Ttl.
Ashland	1	0	0	1	5	9	14
Medina	0	0	0	0	3	5	8
Lorain	0	0	0	0	0	5	5
Wayne	9	0	1	8	4	12	16
Richland	1	4	0	0	0	1	1
Hocking	1	0	1	0	0	0	0
Vinton	1	0	0	1	0	1	1
Coshocton	0	0	0	0	1	0	1
Holmes	8	20	2	5	10	26	36
Jackson	1	0	0	1	5	1	6
Athens	4	0	1	3	7	8	15
Meigs	1	5	0	0	0	1	1
Summitt	0	0	0	0	0	1	1
Cuyahoga	0	0	0	0	1	1	2
Lawrence	0	0	0	0	0	1	1
Total Jan.	27	29	5	19	36	72	108
Total Dec.	53	154	8	38	40	74	114
Difference	26	125	3	19	4	2	6

ASHLAND COUNTY
WELLS COMPLETED

Orange—William Monteith, Logan Gas 8 ..... gas

WAYNE COUNTY

Milton—Elmer Steiner, Logan Gas 1.... gas
Plain—W. M. Gill, Logan Gas 3..... gas
Franklin—Dave Myers, Burton-Morgan & Stephens 1 ..... dry
Cannan—M. Shoemaker, Empire G. & F. 1 ..... gas
A. B. Fouch, Logan Gas 1..... gas
J. Kissinger, Logan Gas 2..... gas
C. Sells, East Ohio Gas 1..... gas
J. R. & S. Whonsettler, Arthur & Mills 1 ..... gas
J. Gingery, Daugherty Bros. 1..... gas

Wells completed 9
Dry 1
Gas 8

RICHLAND COUNTY

Springfield—G. A. Hout, Berry & Hout 1 4

HOCKING COUNTY

Benton—Thomas W. Burns, Logan Gas 1 dry

VINTON COUNTY

Clinton—B. F. Wells, Ohio Fuel Gas 1.. gas

HOLMES COUNTY

Monroe—C. M. Shank, East Ohio Gas 3 gas
Welcome Church, East Ohio Gas 1.. gas
W. A. Smith, Empire Gas & Fuel 1.. dry
J. B. Finney, Empire Gas & Fuel 1.. 20
U. S. Davenport, Empire Gas & Fuel 2 gas
Charles Barnes, Klise-Eckstein-McCann 3 ..... gas
Sanders Martin, Klise-Eckstein-McCann 1 ..... gas
Al R. Mackey, Burton-Morgan & Stephens 3 ..... dry

Wells completed 8
Production 20
Dry 2
Gas 5

JACKSON COUNTY

Coal—L. V. Reed, Ohio Fuel Gas 2.... gas

ATHENS COUNTY

Carthage—Oscar Clark, Ohio Fuel Gas 3 gas
A. J. Russell, Logan Gas 3..... gas
Rome—E. Cunningham, Stewart Oil & Gas 6 ..... dry
W. B. Rice, Rice Oil & Gas 6..... gas

Wells completed 4
Dry 1
Gas 3

MEIGS COUNTY

Sutton—Emma Williams, Ohio Fuel Supply 1 5

ASHLAND COUNTY
Rigs

Hanover—Howard Brookover, Logan Gas 2.
J. W. Sellers, Logan Gas 1.
Orange—J. J. Brown 6, Logan Gas 1.
Greene—Martha Bowen, Logan Gas 2.
C. Casner, Ohio Fuel Gas 1.

Wells Drilling

Hanover—Casper Paul, Ohio Fuel Gas 1.
C. D. Maxwell, Ohio Fuel Gas 1.
Rhoda Black, Ohio Fuel Gas 1.
H. Brookman, East Ohio Gas 1.
Mohican—G. W. Black, Logan Gas 2.
Orange—J. J. Brown 7, Logan Gas 1, 2.
A. J. McClelland, Ringler & Co. 1.
Greene—P. C. Cowan, Logan Gas 1.
Rigs, 5; wells drilling, 9; total, 14.

MEDINA COUNTY
Rigs

Harrisville—J. S. Wisler, Logan Gas 1.
Lafayette—Hipolite Karas, Ohio Fuel Gas 1.
Westfield—Mark P. Sterns, Ford Barnhart & Co. 1.

Wells Drilling

Harrisville—Malissa Steele, East Ohio Gas 1.
Litchfield—Thomas Haurey, Logan Gas 1.
Montville—J. K. Nold, Ohio Fuel Gas 1.
York—Ada G. Swartz, Ohio Fuel Gas 1.
Brunswick—Gabriel Kavoch & Co., Ohio Fuel Gas 1.
Rigs, 3; wells drilling, 5; total, 8.

LORAIN COUNTY
Wells Drilling

Grafton—Fred Klinech, Logan Gas 2.
George Mole, Ohio Fuel Gas 1.
Columbia—C. T. Ruder, Ohio Fuel Gas 1.
Jeremiah Martin, Logan Gas 1.
Sheffield, Wm. A. Day, A. J. O'Donnell 1.
Rigs, 0; wells drilling, 5; total, 5.

WAYNE COUNTY
Rigs

Cannan—W. Shoemaker, Empire Gas & Fuel 1.
W. S. Shoemaker, Empire Gas & Fuel 1.
J. Leamon, Empire Gas & Fuel 2.
C. & E. Sells, East Ohio Gas 2.

Wells Drilling

Wooster—James M. Correll, Ohio Oil 3.
William N. Orr, Ohio Oil 2.
Milton—C. Ziegler, East Ohio Gas 1.
C. Kraus, Daugherty Bros. 1.
Congress—Mary N. Shilling, Hulse & Kundtz 2.
J. W. Sheppard, Harmon & Co. 1.
Cannan—H. H. Armstrong, Brinkerhoff & Co. 4.
S. L. Whonsettler, Ohio Fuel Gas 2.
E. J. Betts, Ohio Fuel Gas 2.
J. Leamon, Empire Gas & Fuel 1.
R. C. Cockrell, Burbank Gas 2.
J. Siemons, Daugherty Brothers 3.
Rigs, 4; wells drilling, 12; total, 16.

RICHLAND COUNTY

Franklin—J. Lantz, Coyle & Matthews 2.

VINTON COUNTY
Wells Drilling

Clinton—E. C. Wortman, Ohio Fuel Gas 5.

COSHOCTON COUNTY
Rigs

Newcastle—William Johnson, Logan Gas 1.

HOLMES COUNTY
Rigs

Monroe—Charles Barnes, Ohio Fuel Gas 4.
B. P. & L. Uhl, Ohio Fuel Gas 3.
McCullough, East Ohio Gas 1.
F. C. Close, East Ohio Gas 1.
Al. R. Mackey, Burton-Morgan & Stephens 4.
W. R. Parson, Norwood Oil 2.
David Pyers, Norwood Oil 1.
U. S. Davenport, Empire Gas & Fuel 3.
Hardy—J. Clark Smith, East Ohio Gas 1, 2.
Monroe—B. P. & L. Uhl, Ohio Fuel Gas 2.
Alma Martin, Ohio Fuel Gas 1.
Edwin N. Martin, Ohio Fuel Gas 1.
L. W. Harford, Ohio Fuel Gas 1.
Thomas P. Connor, East Ohio Gas 5.
B. C. Bird, Ohio Fuel Gas 1.
M. G. Bird, Ohio Fuel Gas 2.
Albert Mackey, East Ohio Gas 2.
W. C. Bird, Empire Gas & Fuel 1.
Oscar Korns, Empire Gas & Fuel 3.
Byron Martin, Empire Gas & Fuel 1.
T. T. Finney, Empire Gas & Fuel 2.
W. R. Parson, Norwood Oil 1.
Prairie—Homer A. Bell, East Ohio Gas 1.
William H. Miller, The Pure Oil 2.
Hardy—Jacob Uhl, East Ohio Gas 3, 4.
Harvey Bell, East Ohio Gas 1.
S. H. Sterling, East Ohio Gas 1, 2.
S. S. Foyer, Empire Gas & Fuel 1.
Richland—John N. Patterson, East Ohio Gas 1.
Washington—W. S. Fulmer, Logan Gas 1.
Kilbuck—J. S. Jackson, Carter Oil 1.
A. Purdy, The Pure Oil 2.
Eph Carpenter, A. L. Harbison & Co. 6.
Rigs, 10; wells drilling, 26; total, 36.

JACKSON COUNTY
Rigs

Coal—B. R. Rice, Ohio Fuel Supply 1.
Franklin—George W. Westlake, Ohio Fuel Supply 1.
Lick—Eliza Cherrington, Ohio Fuel Supply 1.
Washington—S. H. Ogiers, Ohio Fuel Gas 1.
Mary C. Anthony, Ohio Fuel Gas 1.

Wells Drilling

Coal—C. W. Haslett, Ohio Fuel Supply 1.
Rigs, 5; wells drilling, 1; total, 6.

ATHENS COUNTY
Rigs

Carthage—Oscar Clark, Ohio Fuel Gas 4.
Dana T. Burns, Ohio Fuel Gas 2.
Troy—C. G. Ford, Ohio Fuel Supply 1.
Nettie Richardson, Ohio Fuel Supply 1.
Rome—P. D. Patton, Ohio Fuel Supply 1.
Frank Crippin, Ohio Fuel Supply 1.
Lick—E. Cherrington, Ohio Fuel Supply 1.

Wells Drilling

Carthage—Thomas Bond, Ohio Fuel Supply 5.
Watkins, McBride & Co. 1.
H. E. Allen, Sweeney & Snodgrass 2.
Kate Evans, Waldon & Co. 2.
Troy—Fritz Ahrendt, McBride & Co. 3.
Rome—W. B. Rice, Rice Oil & Gas 7.
Davis Heirs, H. W. Leeper & Co. 1.
G. S. Parker, Stephens & Youman 4.
Rigs, 7; wells drilling, 8; total, 15.

MEIGS COUNTY

Sutton—Bobert Crow No. 2, Ohio Fuel Supply 1.

SUMMITT COUNTY

Richfield—E. J. Cornell, East Ohio Gas 1.

CUYAHOGA COUNTY
Rigs

Strongville—G. Stelter, East Ohio Gas 2.
Dover—M. Griffin, Hulse & Kundtz 2.
Rigs, 1; wells drilling, 1; total, 2.

LAWRENCE COUNTY
Wells Drilling

Aid—George Carlyle, Ohio Fuel Supply 1.

INDIANA FIELD

Summary of Field Operations

	Comp.	Prod.	Dry	Gas	Rigs	Drg.	Ttl.
Jay	3	30	2	0	0	2	2
Adams	0	0	0	0	0	2	2
Delaware	1	10	0	0	0	1	1
Randolph	0	0	0	0	1	0	1
Gibson	3	56	0	0	0	1	1
Pike	0	0	0	0	0	1	1
Sullivan	1	0	1	0	0	0	0
Hendricks	0	0	0	0	0	1	1
Total Jan.	8	96	3	0	1	8	9
Total Dec.	16	114	3	3	1	10	11
Difference	8	18	0	3	0	2	2

JAY COUNTY
WELLS COMPLETED

Penn—C. C. Harris, Masters & Makeever 1 ..... dry
A. Irey, Barnett, Trasler & Co. 1.... dry
Bear Creek—Mrs. O. Black, Quaker City Oil & Gas 2 30

Wells completed 3
Production 30
Dry 2

DELAWARE COUNTY

Liberty—J. Cline, Geo. D. Roberts 6.... 10

GIBSON COUNTY

Washington—Ira Seifer, Lynch & Co. 1 1
Center—John Wirtz, Gray & Co. 3..... 5
Barton—E. M. Harper, Nelson Bros. 1 50

Wells completed 3
Production 54

PIKE COUNTY

Madison—T. B. Basinger, Murphy Oil of Pa. 2 ..... abd
J. R. Gladish Heirs, Murphy Oil of Pa. 1 ..... abd
J. P. Rumble, Murphy Oil of Pa. 12 abd
Logan—R. G. Shafer, E. C. Boids 2.... abd

Wells abandoned 4

SULLIVAN COUNTY

Fairbanks—I. B. Drake, Stensel & Co. 1 dry

KNOX COUNTY

Harrison—Ida B. Doty, Perry Andrews & Co. 1 ..... abd

JAY COUNTY
Wells Drilling

Penn—James Sutton, American Engineering 2.
Richland—A. N. Wilson, C. E. Whittengill 1.
Rigs, 0; wells drilling, 2; total, 2.

ADAMS COUNTY
Wells Drilling

Wabash—J. H. Barr, W. J. Heeter 4, 5.
Rigs, 0; wells drilling, 2; total, 2.

DELAWARE COUNTY
Wells Drilling

Delaware—L. M. Coons, Clark & Hawkins 6.

RANDOLPH COUNTY
Rigs

Green—W. Cline, T. O. Thorp 2.

GIBSON COUNTY
Wells Drilling

Center—Sam Mussey, Murphy Oil 1.

PIKE COUNTY
Wells Drilling

Monroe—W. Owens, Thichenor & Co. 1.

HENDRICKS COUNTY

Clay—W. E. Christy, Amo Oil 1.

ILLINOIS FIELD

Summary of Field Operations

	Comp.	Prod.	Dry	Rigs	Drg.	Ttl.
Clark	6	103	1	0	8	8
Crawford	0	0	0	0	3	3
Lawrence	3	100	2	0	1	1
Marion	1	0	1	0	0	0
Wabash	4	75	1	1	2	3
Douglas	0	0	0	0	1	1
Union	0	0	0	0	1	1
Jasper	0	0	0	0	1	1
Total January	14	278	5	1	17	18
Total December	15	228	8	2	20	22
Difference	1	50	3	1	3	4

CLARK COUNTY
WELLS COMPLETED

Casey—Zora Shawver, Chrysler & Co. 1 dry
Wheeler Baker, Arkansas Fuel Oil 1.. 15
Wm. Slater, Gillette Oil Corp. 1..... 25
Martinsville—Nettie Baker, C. W. McBride, Inc. 4 40
Johnson—Charles Smeartey, Squires & Co. 11 13
Charles Smearley, Squires & Co. 12.... 5

Wells completed 6
Production 103
Dry 1

CRAWFORD COUNTY

Martin—Susan Whitt No. 2, Ohio Oil 1 abd

LAWRENCE COUNTY

Dennison—Harriett Leighty, S. J. Seed & Son 13 ..... dry

Sam Richardson, Inlet Oil 1 ..... dry
McCloskey Heirs, International Oil & Gas 12 100

Wells completed 3
Production 100
Dry 2

MARION COUNTY

Centralia—Warren Basha, Ewing & Marquis 1 ..... dry

WABASH COUNTY

Wabash—Frank Smith, Hartman & Co. 1 ..... dry
H. Armstrong, J. H. Whiteside & Co. 2 15
Alice R. Biehl, Coon Creek Oil 4.. 40
J. F. Smith, Black Gold Oil 2..... 20

Wells completed 4
Production 75
Dry 1

CLARK COUNTY

Wells Drilling

Casey—William Reisinger, Gillette Oil Corp. 3.
William Slater, Gillette Oil Corp. 2.
J. J. Ashley, H. A. Wertz 1.
Wheeler Baker, Arkansas Fuel Oil 2.
Martinsville—Harriett Slater, Titus Oil 3.
S. N. Brosman, Ohio Oil 16.
Nettie Baker, W. C. McBride, Inc. 5.
Johnson—Charles Snearley, Squires & Co. 13.
Rigs, 0; wells drilling, 8; total, 8.

CRAWFORD COUNTY

Wells Drilling

Oblong—Edward Henry, Dinsmore Oil 3.
Martin—D. C. Brubaker, W. W. Splane 9.
W. L. Hughes, Ohio Oil 19.
Rigs, 0; wells drilling, 3; total, 3.

LAWRENCE COUNTY

Wells Drilling

Lawrence—G. C. Dunlap, Samuels, Duffield & Co. 10.

WABASH COUNTY

Rigs

Wabash—H. Dorney, Max Oil 2.

Wells Drilling

Wabash—H. A. Price, Wirebach & Co. 1.
Friendsville—E. F. Craig, Gray & Co. 1.
Rigs, 1; wells drilling, 2; total, 3.

DOUGLAS COUNTY

Wells Drilling

Sargent—W. E. Brown, Douglas Oil 1.

UNION COUNTY

Wells Drilling

Bald Knob—Near Alta Pass, W. MacSmith 1.

JASPER COUNTY

Wells Drilling

Smallwood—N. Cunningham, George Vanders 1.

KENTUCKY-TENNESSEE

Summary of Field Operations

	Comp.	Prod. Dry	Gas	Rigs	Drg.	Ttl.
Wayne	7	37	3	0	2	7	9
Estill	1	0	1	0	0	1	1
Morgan	1	0	1	0	0	0	0
Wolfe	0	0	0	0	0	4	4
Lee-Owsley ...	6	24	1	1	1	16	17
Lawrence-Johnson	13	330	0	0	0	31	31
Johnson-Magoffin ...	11	79	1	1	2	23	25
Floyd	3	30	0	1	0	5	5
Elliott	0	0	0	0	0	2	2
Clay	1	0	0	1	0	0	0
Rowan	0	0	0	0	0	2	2
Breathitt	0	0	0	0	0	1	1
Jackson	0	0	0	0	0	2	2
Madison	0	0	0	0	0	1	1
Fleming	0	0	0	0	0	1	1
Bell	0	0	0	0	0	1	1
Boyd	0	0	0	0	0	1	1
Martin	0	0	0	0	0	2	2
Laurel	0	0	0	0	0	1	1
Harland	0	0	0	0	1	0	1
Warren	7	108	3	0	3	26	29
Allen	16	289	9	0	2	16	18
Barren	18	64	5	2	5	26	31
Owensboro	5	45	1	0	0	11	11
Cumberland ..	3	160	0	0	0	14	14
Russell	0	0	0	0	0	2	2
Logan	0	0	0	0	0	2	2
Simpson	0	0	0	0	1	0	1
Metcalf	0	0	0	0	0	3	3
Green	0	0	0	0	0	1	1
Kentucky	92	1,206	24	6	17	203	220
Tennessee	2	0	1	1	6	9	15
Mississippi ...	0	0	0	0	6	20	26
Alabama	0	0	0	0	1	9	10
Georgia	0	0	0	0	2	3	5
Total Jan. ..	94	1,206	25	7	32	244	276
Total Dec. ..	102	1,645	23	7	30	298	328
Difference ..	8	439	2	0	2	54	52

WAYNE COUNTY

WELLS COMPLETED

Monticello—T. L. Harmon, Spradlin & Marsh 3 5
J. A. Brown, Marsh & Shearer 1..... 35
J. Stinson, Head, Brown & Co. 2..... 2
Sperd Bryant, A. G. Bryant 2..... dry
T. C. Morrow, Beaver Pet. 7 ..... dry
J. C. Cooper, Pyle & Abbott 1..... dry
Stinson, Kennedy & Taylor 1..... 5

Wells completed 7
Production 37
Dry 3

ESTILL COUNTY

Irvine—Williams, Scott, Pratt & Co. 1 dry

MORGAN COUNTY

Cannel City—Kendall, Petroleum Exploration 6 ..... dry

LEE-OWSLEY COUNTIES

Beattyville—Gourley-McGuire, Black Oil 9 15
Rowland, H. A. Randall & Co. 1.... 3
Elmer Evans, Combs Bros. Dev. 4... 2
Wm. Gabbard, C. W. Friend & Co. 1.... 4
Edgar Manis, Williams & Edwards 1 dry
Addison, Edward Riggenbartam 1... gas

Wells completed 6
Production 24
Dry 1
Gas 1

LAWRENCE-JOHNSON COUNTIES

North Weir—R. N. Sparks No. 1, Union Gas & Oil 2 4
Foster Ferguson, Union Gas & Oil 2.. 60
Caney Sparks, Union Gas & Oil 1.... 60
C. E. Dobyne No. 1, Union Gas & Oil 4 40
Wm. Lester, Union Gas & Oil 5..... 40
J. E. Holbrook No. 2, Union Gas & Oil 2 30
James Dials, Union Gas & Oil 6..... 30
D. H. Ferguson, Union Gas & Oil 6.. 25
C. K. Dobyne, Garrison & Townsend 13 37
Foster Ferguson, Garrison & Townsend 13 15
J. M. Wheeler, Cumberland Petroleum 6 3
A. M. Wheeler, Cumberland Petroleum 4 3
W. E. Skaggs, Hovis & Young 2..... 4

Wells completed 13
Production 350

JOHNSON-MAGOFFIN

South Weir—Wm. Flint, Petroleum Exploration 1 ..... dry
Unknown 2, The Pure Oil 1..... gas
Bailey Heirs, Diamond Oil 3 5
W. P. Adams, New Domain Oil & Gas 9 2
Paris Long, Carter Oil 8..... 3
Jack Hunley, Red Rock Petroleum 1 1
J. H. Arnett, Bed Rock Petroleum 17 25
Frank Conley, Bailey & Conley 15.... 5
C. & E. Roark, Kentucky Counties Oil 4 15
Jess Adams, Model Oil 2 20
Williams Bros., R. G. Gillespie 2..... 3

Wells completed 11
Production 79
Dry 1
Gas 1

FLOYD COUNTY

Hueyville—C. E. Allen, Eastern Carbon Black 2 ..... gas
J. W. Huff, Distal-Martin Oil & Gas 1 15
A. P. Webb, New Domain Oil & Gas 6 5

Wells completed 3
Production 20
Gas 1

CLAY COUNTY

Oneida—Standard Oil of Kentucky 1.. gas

WARREN COUNTY

Bowling Green—Price-Hall, Ruby Cons. Development 5 35
W. R. Hinton, P. H. Lavelle 6..... 40
H. Shannon, Bolling & Lomna 2..... 12
H. Shannon, Wiles & Co. 4..... dry
Lee Butts, Russell Oil Corp. 4..... dry
Smith, Rockfield Oil 12..... 15
Frank Martin, Dixon & Sledge 5..... 6

Wells completed 7
Production 108
Dry 3

ALLEN COUNTY

Scottsville—Burton Bros., Russell Oil Corp. 15 ..... dry
Weigle, Russell Oil Corp. 7..... dry
Buchanan, C. Guy 7..... dry
W. L. Motley, W. R. Thompson 3.... 5
Carver-McCandless & Co. 10..... 2
Reeves-Richardson, White Plains Oil & Gas 1 ..... dry
J. R. Hornbuckle, White Plains Oil & Gas 4 ..... dry
J. R. Hornbuckle, White Plains Oil & Gas 5 160
Lyle, Bastrus & Work 4..... dry
Wheat, Peerson & Bastrus 6..... dry
Travelstead, H. A. Kiser 5..... 5
Levi Hinton, Pennsylvania Parties 5. 7
Smith, Hice & Co. 1..... dry
Douglas, Work & Co. 1..... dry
J. W. Frost, R. A. McLain 8..... 100
E. A. Ayres, Wynn, Lowe & Co. 16.... 10

Wells completed 16
Production 289
Dry 9

BARREN COUNTY

Glasgow—Chamberlin, T. L. Gorby 1.. 5
Ritchie, Star Oil 13..... 7
Star, Star Oil 5 3
Gooden, Carter Oil 4..... 8
Jess Wininger, Carter Oil 1..... 5
S. Childress, Mazel Oil 6..... 3
Dodder, Reese & Co. 1..... 4
Bradford, Zeigler, Scott & Co. 3..... 6
George Dossey, Nelson & Co. 1..... dry
Burris, Henderson Oil 3..... dry
Bruton, Fred Moore 3..... 6
Mildred Church, Wood Oil 1..... gas
Pointer, Consolidated Gas 1..... gas
Greer, Lew J. Emery Sons 2..... 9
Bridges, Lew J. Emery Sons 2..... dry
Harston, Lew J. Emery Sons 26..... 3
Bud Mansfield, Esslinger Oil 1..... dry
Settle, Stafford & Co. 1..... dry

Wells completed 18
Production 64
Dry 5
Gas 2

OWENSBORO DISTRICT

Owensboro—A. Stewart, Kentucky Oil 16 5
W. T. Bickett, I. N. Harkless 1..... 10
J. T. & A. T. Casey, I. N. Harkless 6 15
J. V. Evans, Thomas & Co. 1..... 15
Dave King, Greasey Creek Oil 4..... dry

Wells completed 5
Production 45
Dry 1

CUMBERLAND COUNTY

Burkesville—M. Kerr, A. S. McClintock, Atty. 3 10
Doll Boles, Vedder Oil 1 10
M. E. Coop W. S. Raydure 3 140

Wells completed 3
Production 160

TENNESSEE

SUMNER COUNTY

Gallatin—Stewart-Terrell, Dr. Sims 1.. gas
Unknown, E. A. Oliver Oil Synd. 1.. dry

WAYNE COUNTY

Rigs

Monticello—Elem, Wright & Bell 1.
T. C. Morrow, Beaver Petroleum 8.

Wells Drilling

Monticello—Bridgeman, Spradlin & Marsh 3.
Huffaker-Smith, Bridgeman Oil 3.
Upchurch, Head, Brown & Co. 4.
W. T. Asberry, J. H. Hatfield 4.
B. Hemminger, Illiken Oil 2.
A. W. Campbell, Clark Oil & Gas 7.
T. T. Davis, Vulcan Oil 14.
Rigs, 2; wells drilling, 7; total, 9.

ESTILL COUNTY

Wells Drilling

Irvine—Smith, Clark Oil & Gas 2.

WOLFE COUNTY

Wells Drilling

Torrent—Ann Horton, McCombs Prod. & Ref. 9.
James Roberts, Atlantic Oil Prod. 2.
E. B. Roberts, Federal Oil 4.
Spencer Heirs, Kentucky Star Oil 2.
Wells drilling, 4.

LEE-OWSLEY COUNTIES

Rigs

Beattyville—Susan Tincher, Combs Brothers Development 1.

Wells Drilling

Beattyville—Adaline Porter, Hupp, Duff & Co. 5.
James Porter, Hupp, Duff & Co. 2.
George Porter, Hupp, Duff & Co. 3.
Gourley-McGuire, Black Gum Oil 10, 11.
Gourley-McGuire, Petroleum Exploration 3, 4.
Spence Flannery, Petroleum Exploration, 16, 17.
Spencer Heirs, Buch & McCandless 1.
Andy J. Combs, Combs Brothers Development 5.
Robinson, French & Co. 1.
Daniels-Foreman, Henry Oil 2.
Mchaffee, Carl Prather 1.
Huntington, Huntington Oil Syndicate 4.
Logan Combs, Hobbs Brothers 1.
Rigs, 1; wells drilling, 16; total, 17.

LAWRENCE JOHNSON COUNTIES

Wells Drilling

North Weir—Castle Heirs, Union Gas & Oil 1.
J. E. Holbrook No. 1, Union Gas & Oil 3.
W. D. Lester, Union Gas & Oil 5.
Levisa Skaggs, Union Gas & Oil 15.
J. C. Gillam No. 1, Union Gas & Oil 8.
T. F. Holbrook, Union Gas & Oil 30.
Foster Ferguson, Union Gas & Oil 2, 3, 4.
C. E. Dobyne No. 1, Union Gas & Oil 5, 6.
C. K. Dobyne, Garrison & Townsend 14, 15, 16, 17.
Foster Ferguson, Garrison & Townsend 4.
J. J. Skaggs, Cumberland Petroleum 3.
Jesse Rose, Indian-Tex Petroleum 8, 9.
G. Gillam, Indian-Tex Petroleum 12, 13.
J. D. Bond, J. T. Hare & Son 3.
Ira Lester, W. M. Stone & Co. 7, 8.
B. A. Hamilton, David Fox 4.
W. E. Skaggs, Hovis & Young 3.
Jesse Lyons, Keaton Oil & Gas 29.
W. H. Kelley, Mid-South Oil 2.
Wayne Moon, Tom Hays 2.
C. Osborne, Skaggs, Miller & Co. 1.
Robert Fyffe, Pluto Oil 6.
C. S. Slaggs, Figley, Day & Co. 5.
Wells drilling, 31.

JOHNSON-MAGOFFIN COUNTIES

Rigs

South Weir—Eliza Powers, Clyde Oil 6.
W. H. Collins, Petroleum Exploration 4.

Wells Drilling

SouthWeir—J. J. Howard, Petroleum Exploration 1.
W. S. Adams, Petroleum Exploration & Weiser Oil 5.
Unknown No. 1, The Pure Oil 1.
W. M. Prater, Structure Oil 9.
Tollie Conley, R. G. Gillespie 6.
Sam Blanton, R. G. Gillespie 16, 17.
J. D. Moore, R. G. Gillespie 3.
Williams Brothers, R. G. Gillespie 4.
P. E. Caudill, Reno Oil 10.
Sam Collins, Cumberland Petroleum 10.
J. P. Conley, Cumberland Petroleum 7.
Dan Harmon, C. T. Rule, trustee 7.
W. P. Adams, Oliver Jenkins 5.
Cleveland Salyer, Bed Rock Pet. 2.
S. Howard, Mid-South Oil 5.
Sam Blanton, Mid-South Oil 6.
Branch Blanton, Mid-South Oil 3.
F. M. Tackett, Wheeler & Co. 1.
Green Risner, Virginia Gasoline & Oil 4.
Julia Salyer, Magoffin Syndicate 3.
J. M. Frazier, Short Fork Oil 1.
B. F. Whitt, Marie Oil 2.
Rigs, 2; wells drilling, 23; total, 25.

FLOYD COUNTY

Wells Drilling

Hueyville—Elbert Collins, Yolando Oil 1.
Kentucky Pine Coal, Brown & Harmon 1
C. D. Patrick, Carter Oil 1.
Roy McCornico, Eastern Carbon Black 1.
S. C. Allen, Eastern Carbon Black 8.
Wells drilling, 5.

ELLIOTT COUNTY

Isonville—J. F. Dials, Wheeler & Campbell 3.
G. W. Kelley, McConnell & Co. 1.
Rigs, 0; wells drilling, 2; total, 2.

ROWAN COUNTY

Wells Drilling

Morehead—Near Hope, McKinney Brothers 1.
Caney Creek, McDonald & McGuire 2.
Rigs, 0; wells drilling, 2; total, 2.

BREATHITT COUNTY

Wells Drilling

Jackson—Near Quicksand, Dukate & Co. 1.

JACKSON COUNTY

Wells Drilling

McKee—C. E. Ballard, Eastern Gulf Oil 1.
Standard Oil of Kentucky 1.
Rigs, 0; wells drilling, 2; total, 2.

MADISON COUNTY

Boonesboro—D. J. Williams, J. M. Thompson 1.

FLEMING COUNTY

Wells Drilling

Grange City—Unknown, Dr. Connelly 1.

BELL COUNTY

Wells Drilling

Middlesboro—Canada Mt., Canada Peak Oil 1.

BOYD COUNTY

Wells Drilling

Ashland—Chadwick Creek, Al Bartram 1.

MARTIN COUNTY

Wells Drilling

Ines—Alfred Carter, Big Derby Oil & Gas 1.
Unknown, Carter Oil 1.
Rigs, 0; wells drilling, 2; total, 2.

LAUREL COUNTY

Wells Drilling

London—Mrs. L. Hubbard, Piney Oil & Gas 1.

HARLAN COUNTY

Rigs

Harlan—Near Colfax, Rex Carpenter 1.

WARREN COUNTY

Rigs

Bowling Green—Gillespie, H. Z. Clark, trustee, 5.
Price, Caskey & Pryor 6.
Biddle, Cadet Oil & Gas 22.

Wells Drilling

Bowling Green—Price-Hall, Ruby Cons. Dev. 6.
Jesse Shanks, Amfot Oil Corp. 8, 9.
W. R. Hutten, P. H. Lavelle 7.
Bryant, Cunningham & Henry 7.
Morehead, Lucille Oil Synd. 6.
H. Shannon, Bolling & Lowman 3.
C. L. Dillard, Roy Hogan 3.
Ben Ford, Roy Hogan 4.
Vance, Illinois-Kentucky Oil Synd. 6.
Dr. Moss, Frank Fritz 6.
Potter, Tichner & Co. 1.
G. Davenport, T. A. Sheridan 3, 5, 6, 7, 8.
Jenkins, T. A. Sheridan 1.
Manning, Teague & Co. 1.
J. L. Jenkins, Midland Oil Corp. 9.
Oliver Grimes, Wood Oil 7.
Elrod, Lydia Oil 9.
J. V. Covington, J. B. Fetty, trustee, 6, 7.
Hewitt, New Domain Oil & Gas 5.
George Ringlewood, H. J. Dobson 4.
Rigs, 3; wells drilling, 26; total, 29.

ALLEN COUNTY

Rigs

Scottsville—F. Dyson, Ruby Cons. Development 11.
Straight, M. W. Graham 2.

Wells Drilling

Scottsville—W. E. Oliver, Gainesville Oil Synd. 2.
Carpenter-Dent, Unknown 8.
C. C. Hinton, Pennsylvania Parties 1.
Lyle, Bastrus & Work 5.
Kennedy, Hice & Co. 2.
T. Hinton, Unknown 2.
Clack, Neeley, Lamp & Co. 2.
Mayhew, Andrus & Millett 4.
Fin Brown, Sutton & Co. 1.
Kennedy, Sutton & Co. 1.
John Farley, Sutton & Co. 1.
J. R. Hornbuckle White Plains Oil & Gas 7.
Lee Moore, Lee More 4.
J. W. Frost, R. A. McLean 9.
E. A. Ayres, Wynn, Lowe & Co. 17.
A. W. Duke, Vic DeCaigney 8.
Rigs, 2; wells drilling, 16; total, 18.

BARREN COUNTY

Rigs

Glasgow—Hans Gassaway, Moore & Baker 1.
Lessenberry, T. L. Gorby 3.
Cassidy, T. L. Gorby 3.
Taylor, T. L. Gorby 3.
Oaks, Brendal & Maxey 2.
Glasgow—Bybee, T. L. Gorby 1.
Free, Star Oil 5.
Bishop, Bishop Brothers 3.
Bradford, Ziegler, Scott & Rice 4.
Burton Heirs, Shriver & Co. 1.
Neeley, Stafford & Rhoedener 3.
Price Heirs, Rhoedener & Co. 2.
B. Scott, Wiggins & Gillespie 7.
Lewis, Rhoedener & Co. 2.
Will Church, Wood Oil 2.
John Church, Wood Oil 2.
Hall Baker, Consolidated Gas 2, 3.
Horace Church, McCandless & Co. 1.
Evans, Harrington & Norris Bros. 1, 2.
J. M. Bybee, Lew J. Emery Jr. Sons 1.
C. W. Bellamy, Lew J. Emery Jr. Sons 1.
Ritter Brothers, Stafford & Maxey 3.
Houk Consolided Gas 1.
Rogers, Consolidated Gas 1.
Travers, Fred Moore 4.
Burris, Henderson Oil 4.
Jess Wininger, Carter Oil 2.
Hatfield, Big Jack Oil & Dev. 1.
McLaughlin, Porter & Co. 2.
Rigs, 5; wells drilling, 26; total, 31.

OWENSBORO DISTRICT

Wells Drilling

Owensboro—M. Mosley, Mosley Oil 1.
Nick Spurrier, I. N. Harkless 3.
W. T. Bickett, I. N. Harkless 2.
F. V. Miller, C. A. Leeper 1.
Veach, C. A. Leeper 1.
O. G. Ward, C. E. Daugherty 1.
Widow Crowe, C. E. Daugherty 1.
Jesse Swope, Nutty & Pyle 2.
Bartley, Wood Oil 2.
J. H. Evans, Thomas & Co. 2.
Gabbard, Pellville Oil 1.
Rigs, 0; wells drilling, 11; total, 11.

CUMBERLAND COUNTY

Wells Drilling

Burkesville—M. Scott, Coe & Co. 1.
Kin Crawford, Dayton Oil Synd. 4.
Coffee, Young Oil 3.
Wess Run, Hook & Wise 1.
Davidson, Wilcox Brothers 1.
Sharp, Wilcox Brothers 1.
Carey, W. S. Raydure 1.
Link, Lee Tomlinson 1.
J. C. Hood, Baldensparger & Thrasher 1.
Love Coe, E. H. West 2.
Bell, Daniel Boone Oil 2.
A. D. Hook, McClintock & Raydure 1.
C. T. Cheatham, Robert Stead 1.
C. V. Williams, Cumberland Oil Synd. 1.
Rigs, 0; wells drilling, 14; total, 14.

RUSSELL COUNTY

Wells Drilling

Creelsboro—B. F. Leach, Carnahan Oil 4.
C. O. Lay, Reedman & Co. 1.
Nellie Bledso, Creelsboro Parties 1.
Rigs, 0; wells drilling, 3; total, 3.

LOGAN COUNTY

Wells Drilling

Auburn—Walters S. W. 50 acres, Stewart & Co. 1.
Walters, W. 40 acres, G. C. Foster 1.
Rigs, 0; wells drilling, 2; total, 2.

SIMPSON COUNTY

Rigs

Franklin—Summers, E. M. Treat & Co. 13.

METCALF COUNTY

Wells Drilling

Edmonton—A. J. Thompson, T. Petty & Co. 1.
Near Edmonton, J. C. Richards 1.
L. H. Thompson, Hartramf & Co. 1.
Rigs, 0; wells drilling, 3; total, 3.

GREENE COUNTY

Wells Drilling

Greensburg—Wooldridge, M. K. White & Son 1.

TENNESSEE

CLAY COUNTY
Wells Drilling
Colina—Tinsley Bottom, Oil Fork Dev. 1.
Draper, DaFoe & Co. 1.
Stover, Alexander & Co. 2.
Unknown, Spain & Co. 2.
Rigs, 0; wells drilling, 4; total, 4.

GIBSON COUNTY
Wells Drilling
Dyer—Near Dyer, Dyer Oil & Gas 1.

SUMNER COUNTY
Gallatin-Stewart-Terrell, Dr. Sims 2.

OHIO COUNTY
Wells Drilling
Trimble—M. A. Gauldin, Richards & Miller 1.

MADISON COUNTY
Rigs
Jackson—Judie Howard, Cincinnati Oil 2.

HARDEMAN COUNTY
Wells Drilling
Bolivar—Brown Sans, Spring Valley Dev. 1.

FAYETTE COUNTY
Rigs
Somerville—Joe Perry, M. A. Strickland & Co. 1.

BENTON COUNTY
Rigs
Clarksville—Near Eva, Benton Oil & Gas 1.
Near Camden, Unknown 1.
Rigs, 2; wells drilling, 0; total, 2.

HAMILTON COUNTY
Rigs
Chattanooga—Near Daisy, Dryden Oil 1.

RHEA COUNTY
Rigs
Dayton—Near Dayton, Unknown 3.

OVERTON COUNTY
Wells Drilling
Jamestown—Mitchell Creek, W. H. Boswell 1.

MISSISSIPPI
CHICKASAW COUNTY
Houston—J. Flarity, Danner Oil & Gas Trust 2.

PIKE COUNTY
Rigs
Magnolia—Poor Farm, Mississippi Exploration 2.

CLAY COUNTY
Rigs
West Point—Gulf Development 1.

LEGAL

DEPARTMENT OF THE INTERIOR, UNITED STATES LAND OFFICE, BATON ROUGE, LOUISIANA

Notice is hereby given that the following described land in the Caddo oil field, Caddo Parish, Louisiana, is offered for oil and gas lease under Sec. 17 of the act of February 25, 1920 (41 Stat., 437), at the standard royalty fixed for departmental leases varying from 12½ to 33⅓ % of the oil produced, depending upon daily production per well, subject to reduction at discretion of lessor when average daily production of any well shall not exceed ten barrels per day; and 12½ to 16⅔ % of casing-head gasoline, and an annual rental of $1 per acre, payable in advance, which will be credited against royalties as they accrue for that year.

TRACT A: Lot 4, Sec. 5, (14.10 acres), T. 20 N., R. 16W. There is a well situated upon this tract which has had a settled production of about ten barrels of oil per day for several years. By use of vacuum pumping a considerable volume of casing-head gas is being produced. This tract will be sold subject to a satisfactory guarantee by the successful bidder that he will immediately furnish and supply to said well satisfactory vacuum connection. Further guarantee as to a water supply will be required. This well is equipped with all machinery necessary to its operation, having an estimated value of $2000. This machinery is now the property of the United States and all bids are to be accepted subject to payment of the appraised price for machinery, an inventory of which may be seen on day of sale.

Said tract will be offered for sale at public auction at the Federal Court Room, Post Office Building, Shreveport, Louisiana, at 10 A. M. on March 10, 1925, and sold to the qualified bidder offering the highest bonus at the stated royalty. The successful bidder must deposit on day of sale a certified check upon a solvent bank or cash for one-fifth of the amount of each bid, and file the showing of qualifications to receive a lease as required by Sec. 15 of circular 672 oil and gas regulations, as to citizenship and ownership in other permits and leases. The remaining four-fifths of the bid must be paid upon issuance of lease. Plat showing location of tract offered and circular 672 may be secured from the U. S. land office, Baton Rouge, Louisiana, or General Land Office, Washington, D. C.

The bidders are warned against violation of the provisions of Sec. 59 of the U. S. Criminal Code, approved March 4, 1909, prohibiting unlawful combination or intimidation of bidders.

The right is reserved to reject any or all bids in the discretion of the Secretary of the Interior.

Not Costly!

$3.50 will pay for inserting a five-line advertisement in the Classified Wants Section for one month.

20,000 or more readers study it every week.

Classified Wants Section
"Biggest in America"

UNION COUNTY
Rigs
Wallerville—Sappington, Minyard Wells Oil 1.
Wells Drilling
Wallerville—J. Woodson, Minyard Wells Oil 1.
Rigs, 1; wells drilling, 1; total, 2.

FRANKLIN COUNTY
Wells Drilling
Jackson—McGhee, Fletchering & Co. 1.

COPIAH COUNTY
Wells Drilling
Hazlehurst—White, B. H. White 1.
Didlake, Marshall Oil 1.
Rigs, 0; wells drilling, 2; total, 2.

HINDS COUNTY
Wells Drilling
Elton—Near Elton, Jackson Oil 2.

JEFFERSON COUNTY
Wells Drilling
Truly—Near Truly, Manhattan-Tex. Pet. 2.

JACKSON COUNTY
Utica—Near Utica, Jackson Oil 1.

LAFAYETTE COUNTY
Wells Drilling
Oxford—H. Barkins, Kinsey & Co. 1.

LOWNDES COUNTY
Wells Drilling
Artesia—Billups, Anderson Drilling 1.

LINCOLN COUNTY
Wells Drilling
Hartman—Near Hartman, Anderson Drilling 1.

WASHINGTON COUNTY
Wells Drilling
Sec. 30-14-9—Williams, Alhambra Oil & Gas 3.

ITAWABA COUNTY
Wells Drilling
Fulton—J. E. Summer, Steman & Co. 1.

CALHOUN COUNTY
Rigs
Calhoun City—J. Gregory, Northeast Oil 1.

LEAKE COUNTY
Wells Drilling
Conway—Near Conway, Charles B. Stoll 1.

MADISON COUNTY
Wells Drilling
Madison—Nichols, Madison County Oil 1.

GRANADA COUNTY
Wells Drilling
Near Granada, Borden & Co. 1.

CLAIBORNE COUNTY
Rigs
Port Gibson—Bill Young, Mississippi Exploration 1.

HOLMES COUNTY
Rigs
Coxburg—Sec. 18-13-1, Free Run Oil 1.

PANOLA COUNTY
Wells Drilling
Sec. 35-27-2—Klehni, Courtland Oil & Gas 2.

READ THE

Classified Wants

Pages 102-103

DO IT NOW
YOU MAY MISS A BARGAIN

PERRY COUNTY
Richton-Donald, Donald Oil 1.
Wells Drilling
RANKIN COUNTY
Sec. 7-3-4—Finbine Oil 1.
SCOTT COUNTY
Wells Drilling
Forest—Graham, Mississippi Oil & Gas 1.

ALABAMA
MORGAN COUNTY
Wells Drilling
Albany—J. English, Albany-Decatur Oil & Gas 1.

BALDWIN COUNTY
Wells Drilling
Bay Minnette—R. A. Evans, Stoll & Co. 1.

SUMTER COUNTY
Wells Drilling
Cartopa—Sam W. Kendall 1.

HALE COUNTY
Wells Drilling
Greensburg—Hale Oil 1.

SHELBY COUNTY
Wells Drilling
Chelsea—Scott-Cooksey Oil 1.

WILCOX COUNTY
Selma—Blue Bell Oil 1.

CLARKE COUNTY
Wells Drilling
Columbia—Hatchitigbee Anticline, Inter-Coastal Oil 1.
McCorquedale, Keoughan Oil 1.
Rigs, 0; wells drilling, 2; total, 2.

MADISON COUNTY
Wells Drilling
Huntersville—P. J. Mahoney 1.

LAWRENCE COUNTY
Rigs
Moulton—Near Moulton, Tulsa Parties 1.

GEORGIA
PULASKI COUNTY
Rigs
Hawkinsville—Florida-Georgia Cons. Oil 1.

JEFF DAVIS COUNTY
Wells Drilling
Haselhurst—Mid-Georgia Oil & Gas 1.

TELFAIR COUNTY
Scotland—Telfair Oil 1.

BURKE COUNTY
Wells Drilling
Green Cut—Three Creek Oil 1.

WHITEFIELD COUNTY
Wells Drilling
Dalton—Richardson Oil & Gas 1.

American S & B Instruments

reduce manufacturing costs, eliminate spoilage and increase efficiency. They are the result of over 70 years' experience in solving problems of temperature, pressure, speed, etc.

Write for Text Book N-5

American Schaeffer & Budenberg Corpn.

Succeeding
The Schaeffer & Budenberg Mfg. Co.
American Steam Gauge & Valve Mfg. Co.
Hohmann-Nelson Company
BROOKLYN, N. Y.

Boston Cleveland Tulsa Salt Lake
Buffalo Detroit Philadelphia City
Chicago Los Angeles Pittsburgh Seattle

Gasoline Plants **Topping Plants**

Gas Compressing Stations **Refineries**

Designed and Installed Complete

FEDERAL ENGINEERING COMPANY
PITTSBURGH, PA.

Essex Lubricating Devices Are Oil Country Favorites!

Because they are made right and sold right. 22 years on the market.

Sold by jobbers everywhere,

Catalogue on request

Essex Brass Corporation
2000 Franklin Street
DETROIT, MICH.

Top Inlet and Top Outlet

Equitable Meter Company
422-434-444 First Avenue
PITTSBURGH, PA.

Meters and Regulators for Natural or Artificial Gas

Sizes, ½" to 24"

ACCURACY-CONVENIENCE-RELIABILITY

These three ideals are paramount in the construction of Meriam Made Instruments. When your business is in need of Accurate, Convenient and Reliable information there is a Meriam Made Instrument to meet that need.

The Meriam Hydrometer Pot (illustrated), originated in a Testing Laboratory, under actual working conditions and is designed for quick, accurate work and convenience in handling.

Your own dealer can secure quickly from our stock.

THE MERIAM CO.
8405 Detroit Ave., Cleveland, Ohio

Oklahoma-Kansas and Eastern Pipe Line Report

OKLAHOMA-KANSAS PIPE LINE REPORT FOR DECEMBER

Runs

*Prairie P. L. Co.	3,255,000	105,000
Gulf P. L. Co.	1,246,402	40,207
Texas Pipe Line Co.	422,560	13,631
Magnolia Petroleum Co.	1,295,875	41,802
Empire Pipe Line Co.	867,313	27,978
Cosden Pipe Line Co.	795,149	25,649
*Sinclair Pipe Line Co.	1,016,800	32,800
*Other lines	9,300,000	300,000
Total	18,199,099	587,067
Total	18,145,414	604,847
Difference	53,685	17,780

Shipments

*Prairie Pipe Line Co.	3,857,754	124,444
Gulf Pipe Line Co.	1,023,605	33,020
Texas Pipe Line Co.	679,619	21,923
Magnolia Petroleum Co.	1,444,415	46,594
Empire Pipe Line Co.	1,029,203	33,200
Cosden Pipe Line Co.	923,597	29,793
*Sinclair Pipe Line Co.	2,592,857	83,641
Other lines	9,920,000	320,000
Total	21,471,050	692,615
Total	19,657,511	655,250
Difference	1,713,539	37,365

Stocks

	Bbls.
*Prairie Oil & Gas Co.	26,300,000
*Prairie Pipe Line Co.	2,000,000
Gulf Pipe Line Co. and Gypsy Oil Co. L	
Gulf Pipe Line Co. and Gypsy Oil Co.	9,932,241
The Texas Co.	5,438,138
Magnolia Petroleum Co.	9,349,378
Empire Pipe Line Co.	2,980,745
Cosden Pipe Line Co.	2,731,377
*Sinclair Crude Oil Purchasing Co.	28,300,000
Carter Oil Co.	16,935,319
*Other lines	10,500,000
Total	114,467,198
Total	116,255,812
Difference	1,788,614

*Estimated. †Prairie shipments include also Texas crude. Sinclair shipments include also Texas and Wyoming crude.

Runs From Wells

In the following table will be found the regular receipts from wells by various pipe lines in New York, Pennsylvania, West Virginia, Ohio, Kentucky and Indiana for November and December.

	Nov., '24	Dec., '24
Nat. Transit	155,466.95	146,919.77
S. W. Pa. P. L.	76,738.81	77,055.69
Eureka P. L.	313,985.41	325,500.22
Buckeye P. L. (Macksburg)	249,515.67	268,099.71
Buckeye P. L. (Cleveland)	12,628.22	16,901.41
Buckeye P. L. (Lima, etc.)	110,392.18	116,342.97
Indiana P. L.	9,906.56	9,313.04
Cumberland P. L.	317,529.60	332,426.69
N. Y. Transit	15,690.46	18,225.59
Tidewater P. L.	114,304.20	124,235.50
Pure Oil P. L.	173,772.14	181,667.26
Emery P. L.	37,435.54	41,081.18
Indian Ref.	48,956.23	46,543.37
Paragon Dev.	38,440.19	33,306.81
Pittsburgh P. L.	6,554.73	7,614.22
Riggs	7,103.24	
Total	1,688,450.12	1,730,240.45
Daily average	56,281.67	55,814.21

Note — Indian Refining Co. also reported other receipts of 341,917.64 bbls. Paragon Refining Co. had other receipts of 101,843.81 bbls. Paragon Development Co. had other receipts of 3,304.27 bbls. Pittsburgh Pipe Line had other receipts of 2,560.78 bbls.

Petroleum Deliveries

The following tables exhibit the shipments or regular deliveries of various pipe lines in New York, Pennsylvania, West Virginia, Ohio, Kentucky and Indiana for November and December.

	Nov., '24	Dec., '24
Nat. Transit	328,195.08	344,060.58
S. W. Pa. P. L.	76,738.81	320,866.53
Eureka P. L.	133,437.43	683,380.36
Buckeye P. L. (Macksburg)	79,776.94	98,280.86
Buckeye P. L. (Cleveland)	1,212.94	1,456.53
Buckeye P. L. (Lima, etc.)	605,811.51	775,735.14
Indiana P. L.	906,678.87	1,178,592.89
Cumberland P. L.	123,095.54	147,345.46
N. Y. Transit	770,271.02	671,474.49
Northern P. L.	128,548.45	191,021.77
Tidewater P. L.	116,150.08	143,854.30
Pure Oil P. L.	105,576.29	162,869.97
Emery P. L.	34,849.05	42,781.09
Paragon Ref.	110,767.16	105,948.04
Indian Ref.	450,627.79	412,965.43
Paragon Dev.	38,440.19	33,647.32
Pittsburgh P. L.	8,621.26	8,857.56
Riggs	2,314.39	
Total	4,272,010.39	4,693,138.16
Daily average	262,817.37	151,391.55

Indian Refining Co. had other deliveries of 3,215.94 bbls.

Gross Stocks

The gross stocks held by various pipe lines in the oil producing section of New York, Pennsylvania, West Virginia, Ohio, Indiana and Kentucky at the close of November and December were as follows:

	Nov., '24	Dec., '24
Nat. Transit	1,022,658.64	958,729.73
S. W. Pa. P. L.	663,131.46	635,764.50
Eureka P. L.	133,437.43	1,860,765.64
Buckeye P. L. (Macksburg)	395,669.54	369,027.80
Buckeye P. L. (Cleveland)	65,129.15	57,701.66
Buckeye P. L. (Lima, etc.)	4,372,559.45	3,726,305.85
Indiana P. L.	801,675.59	613,810.50
Cumberland P. L.	617,906.57	607,353.62
Southern P. L.	476,795.57	550,124.39
Crescent P. L.	58,213.43	58,170.72
N. Y. Transit	711,774.78	620,729.14
Northern P. L.	679,449.45	976,983.74
Pure Oil P. L.	404,853.15	415,288.64
Emery P. L.	9,770.62	7,841.43
Paragon Ref.	102,333.48	36,658.11
Indian Ref.	135,869.56	69,804.95
Paragon Dev.	9,416.32	13,149.94
Pittsburgh P. L.	4,168.88	5,479.15
Riggs	765.27	
Total	12,268,529.76	11,583,679.52
Decrease	395,531.36	684,850.24

Grades of Oil

The following table shows the amount of the different grades of oil held by the Eastern pipe lines at the close of November and December, showing the gross stocks of the above fields:

	Nov., '24	Dec., '24
Pennsylvania	3,906,769.11	3,932,186.36
Lima	1,330,142.27	1,343,428.02
Kentucky	1,569,619.78	1,408,856.79
Mid-Continent	5,359,367.61	4,851,486.54
Illinois	102,630.99	47,721.81
Total	12,268,529.76	11,583,679.52

Daily Average Runs

The following table shows the daily average runs of the Pennsylvania, Lima and Kentucky oil fields for the past four years:

	1921	1922	1923	1924
January	64,460	67,702	75,790	32,688
February	70,954	75,096	71,093	68,023
March	68,555	78,531	76,592	68,721
April	65,036	75,462	75,614	71,068
May	65,466	77,592	77,365	63,943
June	62,438	76,193	77,593	62,320
July	59,486	76,436	71,879	64,208
August	64,888	79,387	76,910	59,942
September	60,110	78,512	72,368	62,930
October	57,688	77,209	76,256	64,976
November	58,470	75,313	70,762	56,282
December	61,000	73,351	69,271	55,811

Daily Average Shipments

The following table gives daily average shipments from the Pennsylvania, Lima and other fields for past four years:

	1921	1922	1923	1924
January	115,550	119,792	171,067	145,518
February	96,736	111,362	164,219	148,732
March	84,168	127,753	185,487	147,098
April	101,015	127,068	170,751	147,611
May	100,253	127,840	177,102	134,997
June	105,037	137,638	173,598	143,010
July	97,096	137,872	168,330	124,187
August	101,652	153,375	142,766	123,120
September	117,449	158,761	137,266	127,325
October	106,728	165,345	134,597	123,170
November	121,803	165,677	131,426	124,400
December	104,023	172,861	139,909	151,392

Gross Stocks

In the following table will be found the gross stocks of the various lines of the Pennsylvania, Lima and Kentucky oil fields, including oil received from other lines, at the close of each month for the past three years:

	1922	1923	1924
January	16,297,858	14,040,567	12,907,[illegible]
February	17,009,293	14,038,437	13,[illegible]
March	16,877,937	13,872,146	12,906,[illegible]
April	16,777,842	13,737,576	12,922,[illegible]
May	16,948,962	13,815,623	11,355,[illegible]
June	16,810,169	14,541,362	11,544,[illegible]
July	16,660,286	14,646,584	12,062,[illegible]
August	16,235,229	14,770,539	12,251,[illegible]
September	16,228,545	14,803,444	12,304,[illegible]
October	15,757,746	14,504,111	12,064,[illegible]
November	15,171,972	14,157,726	12,268,[illegible]
December	14,323,765	13,444,361	11,[illegible]

Franklin Pipe Line Co.

The following table exhibits the condition of the Franklin Pipe Line at the close of business for the months named and accounted in the stocks and averages reported above:

1923—	Receipts	Shipments	Stocks
December	2,893.07	3,499.37	18,548.37
1924—			
January	3,942.19	3,641.17	18,849.39
February	3,151.78	1,926.56	20,074.61
March	3,398.78	1,716.28	21,756.61
April	3,311.84	2,066.78	23,001.67
May	3,036.50	5,338.21	20,699.96
June	3,188.31	407.01	23,481.26
July	3,067.74	2,334.39	23,214.61
August	2,901.36	6.31	26,109.66
September	2,794.58	5,775.85	23,128.39
October	3,342.40	1,880.56	24,590.23
November	2,700.13	4,862.89	22,427.47
December	3,120.34	2,659.13	22,888.67

The Illinois Field

The following table gives the report of the Illinois Pipe Line Co. in Illinois:

Gross stocks, January 1	3,096,316.12
Runs from wells	613,[illegible]
Other receipts	341,[illegible]
Regular deliveries	501,[illegible]
Other deliveries	445,[illegible]

The amount of Illinois oil run by the Tidewater Pipe Line Co. in December was [illegible],458.71 bbls., and deliveries were [illegible] bbls. Adding these figures to those of the Illinois Pipe Line Co. makes the runs and deliveries from the Illinois Field as follows:

1923—	Runs	Deliveries
December	534,185.04	293,543.61
1924—		
January	493,337.25	290,[illegible]
February	535,490.70	363,[illegible]
March	611,289.36	369,[illegible]
April	514,356.43	339,[illegible]
May	751,080.44	510,[illegible]
June	725,060.87	538,[illegible]
July	759,646.84	563,[illegible]
August	720,457.73	518,[illegible]
September	714,876.36	536,[illegible]
October	741,767.43	543,[illegible]
November	650,147.63	531,[illegible]
December	540,919.22	595,[illegible]

The Tidewater Pipe Co., Ltd., also delivered in December 341,544.32 bbls. of Oklahoma oil. The total deliveries of all grades by the Tidewater were 520,302.64 bbls.

AVERAGE WEEKLY RECEIPTS OF CALIFORNIA OIL AT ATLANTIC AND GULF PORTS

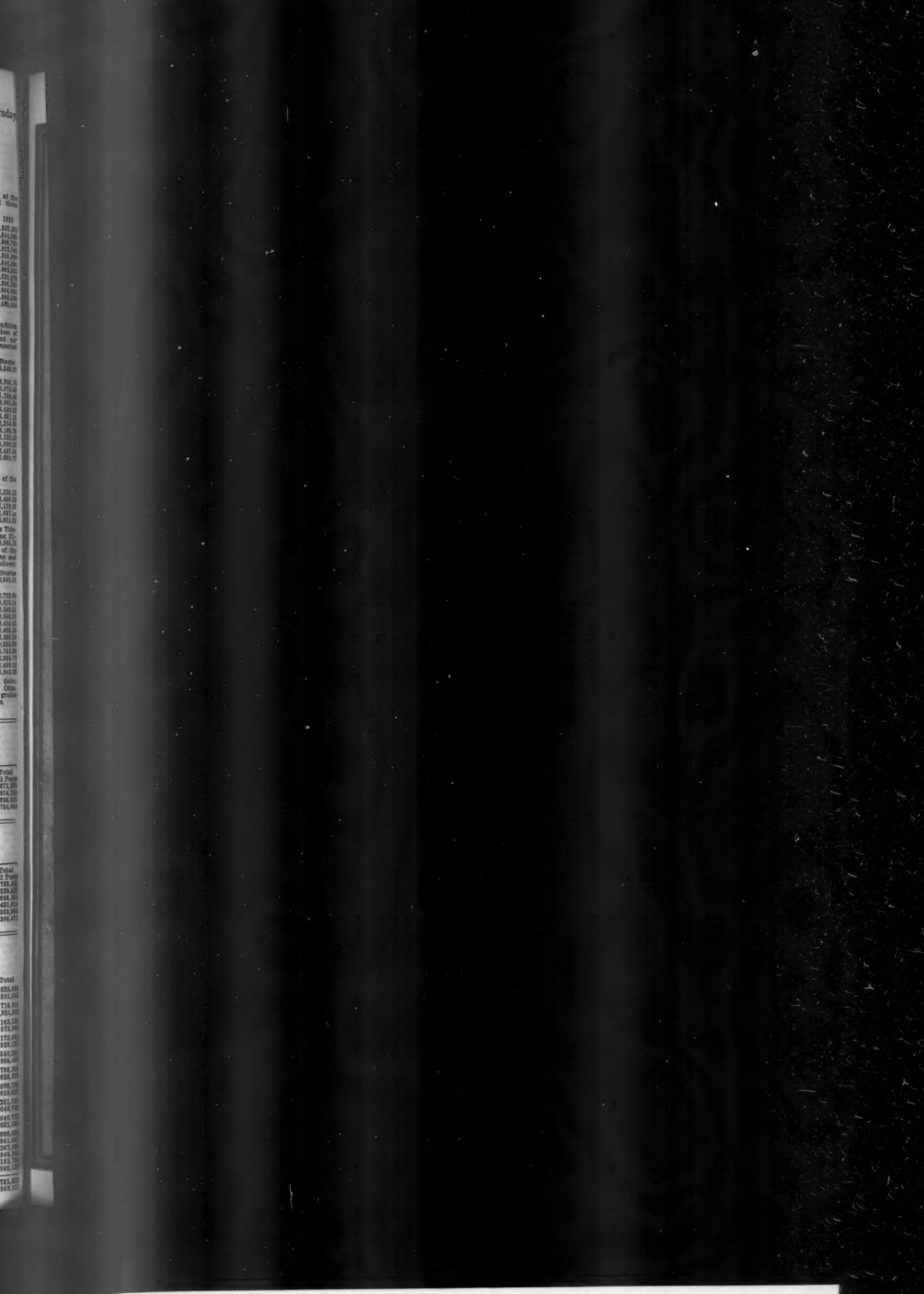
Av. bbls. per wk.—	ATLANTIC PORTS						GULF COAST PORTS						Total All Ports
	Baltimore	Boston	New York	Philadelphia	Others	Total	Galveston	New Orleans Baton Rouge	Pt. Arthur Sabine Pass	Tampa	Total		
July	37,710	16,122	473,516	84,453	42,453	654,748	.....	16,936	.....	.....	.....		[illegible]
August	114,022	33,419	554,387	71,506	33,871	907,515	907,515	.....	6,774	.....	.....		[illegible]
September	67,670	34,531	638,617	76,300	18,900	836,018	.....	.....	.....	.....	.....		[illegible]
October	85,379	49,000	527,948	85,603	36,127	784,056	.....	.....	.....	.....	.....		[illegible]

AVERAGE WEEKLY IMPORTS OF PETROLEUM AT PRINCIPAL UNITED STATES PORTS

Av. bbls. per wk.—	ATLANTIC PORTS						GULF COAST PORTS						Total All Ports
	Baltimore	Boston	New York	Philadelphia	Others	Total	Galveston	New Orleans Baton Rouge	Pt. Arthur Sabine Pass	Tampa	Total		
May	156,485	134,602	288,908	59,613	300,097	939,699	315,679	295,358	199,591	38,164	848,792		1,788,491
June	120,169	108,731	434,931	68,131	239,400	971,362	412,741	251,762	159,831	33,831	858,165		1,829,527
July	62,097	81,291	445,067	38,418	277,970	904,843	320,194	273,456	130,739	34,978	759,367		1,664,210
August	80,839	57,365	347,710	98,903	307,065	891,873	370,549	334,677	115,839	14,877	739,742		1,631,614
September	101,969	45,028	193,300	77,000	204,869	622,066	255,329	315,000	141,170	20,300	731,799		1,353,865
October	136,826	67,516	257,418	90,818	113,127	665,704	231,903	268,616	111,097	29,351	640,967		1,306,671

GROSS PRODUCTION IN THE UNITED STATES FOR 12 MONTHS (Revised)

		California	Oklahoma	Texas	Kansas	Arkansas	Louisiana	Rocky Mountain	Eastern Fields	Total
January:	Month	20,912,500	12,292,833	10,522,143	2,223,878	3,686,680	1,601,575	4,447,089	2,942,050	58,628,[illegible]
	Daily average	674,597	396,543	339,424	71,738	118,925	51,664	143,453	94,905	1,891,[illegible]
February:	Month	19,341,226	12,236,437	10,238,052	2,112,853	3,302,750	1,504,450	3,996,251	2,984,000	55,716,[illegible]
	Daily average	666,939	421,963	353,036	72,857	113,887	51,877	137,791	102,896	1,921,[illegible]
March:	Month	19,913,262	13,336,851	12,044,503	2,206,426	3,882,695	1,701,593	3,827,204	3,250,600	61,163,[illegible]
	Daily average	642,363	430,221	388,532	71,175	125,247	54,890	123,460	104,858	1,972,[illegible]
April:	Month	19,299,849	13,452,240	11,577,246	2,268,540	4,068,225	1,495,582	3,738,332	3,273,600	58,173,[illegible]
	Daily average	643,328	448,408	385,908	75,618	135,608	49,853	124,611	109,120	1,939,[illegible]
May:	Month	19,833,576	14,247,697	11,623,395	2,459,765	4,659,117	1,596,701	3,866,010	3,264,000	61,550,[illegible]
	Daily average	639,793	459,603	374,948	79,347	150,288	51,507	124,710	105,042	1,984,[illegible]
June:	Month	18,807,999	14,447,390	11,602,350	2,469,380	4,756,443	1,812,580	3,638,624	3,253,600	60,788,[illegible]
	Daily average	626,933	481,580	386,745	82,313	158,548	60,429	121,288	108,453	2,026,[illegible]
July:	Month	19,274,755	15,191,860	11,917,137	2,671,053	4,597,969	1,815,966	3,768,398	3,371,600	62,608,[illegible]
	Daily average	621,766	490,060	384,424	86,195	148,322	58,580	121,561	108,761	2,019,[illegible]
August:	Month	19,112,998	16,525,356	11,808,876	2,717,398	4,359,241	1,702,525	3,749,375	3,286,000	63,261,[illegible]
	Daily average	616,548	533,076	380,931	87,658	140,621	54,920	120,948	106,000	2,040,[illegible]
September:	Month	18,308,233	16,299,030	11,089,492	2,638,900	4,029,535	1,795,575	3,330,007	3,150,000	60,640,[illegible]
	Daily average	610,274	543,301	369,650	87,963	134,318	59,853	111,000	101,936	2,021,[illegible]
October:	Month	18,696,559	16,189,898	10,942,005	2,768,455	3,983,696	1,774,707	3,058,268	3,395,000	60,808,[illegible]
	Daily average	603,115	522,255	353,000	89,305	128,506	57,249	98,654	109,516	1,961,[illegible]
November:	Month	17,767,034	15,965,620	10,731,264	2,597,460	3,461,050	1,965,921	2,788,110	2,941,000	58,267,[illegible]
	Daily average	592,234	531,854	357,709	86,582	115,035	65,531	92,937	98,033	1,940,[illegible]
December:	Month	18,795,126	16,031,185	11,264,915	2,537,443	3,380,511	1,870,876	2,302,888	3,000,850	59,183,[illegible]
	Daily average	606,294	517,135	363,384	81,853	109,049	60,351	74,287	96,402	1,909,[illegible]
Total, 1924		230,063,117	176,206,397	135,361,378	29,671,551	48,167,912	20,638,051	42,510,516	38,112,300	730,731,[illegible]
Daily average		628,588	481,438	369,840	81,070	131,606	56,388	116,149	104,132	1,969,[illegible]



WESTERN PETROLEUM REFINERS ASSOCIATION

Convention, March 3, 4 and 5, 1925, Kansas City, Mo.

Member Companies:—

ANDERSON-PRICHARD OIL CORPORATION, Oklahoma City
AMARILLO REFINING COMPANY, Amarillo, Texas
AMERICAN REFINING COMPANY, Wichita Falls, Texas
ATLANTIC REFINING COMPANY, Dallas, Texas
BARNSDALL REFINING COMPANY, Chicago, Ill.
BOLENE REFINING COMPANY, Enid, Okla.
CHAMPLIN REFINING COMPANY, Enid, Okla.
CHESTNUT & SMITH CORPORATION, Tulsa, Okla.
COSDEN & COMPANY, Tulsa, Okla.
CUSHING REFINING & GASOLINE COMPANY, Cushing, Okla.
DE LEON PIPE LINE & REFINING COMPANY, De Leon, Texas
DERBY OIL COMPANY, Wichita, Kans.
ELDORADO REFINING COMPANY, Eldorado, Kans.
EMPIRE REFINERIES, Inc., Tulsa, Okla.
GARBER REFINERY, Inc., Garber, Okla.
GILMER OIL COMPANY, Ardmore, Okla.
GLOBE OIL & REFINING COMPANY, Blackwell, Okla.
GOLDEN RULE REFINING COMPANY, Wichita, Kansas
GRISWOLD OIL CORPORATION, Wichita Falls, Texas
IMPERIAL REFINING COMPANY, Tulsa, Okla.
IOWA PARK PRODUCING & REFINING CO., Wichita Falls, Tex.
ELLIOTT JONES & COMPANY, Inc., San Antonio, Texas
KANSAS CITY REFINING COMPANY, Kansas City, Mo.
KETTLE CREEK REFINING COMPANY, Tulsa, Okla.
LIBERTY OIL COMPANY, New Orleans, La.
LORRAINE PETROLEUM COMPANY, Tulsa, Okla.
LUBRITE REFINING COMPANY, St. Louis, Mo.
MARLAND REFINING COMPANY, Ponca City, Okla.
MEGARGEL OIL & REFINING COMPANY, Wichita Falls, Texas
MILLER PETROLEUM COMPANY, Kansas City, Mo.
MOORE REFINING COMPANY, Arkansas City, Kansas
MUTUAL OIL COMPANY, Kansas City, Mo.
LONE STAR GAS COMPANY, Dallas, Texas
OIL STATE REFINING COMPANY, Enid, Okla.
ORIENT PETROLEUM COMPANY, Wichita Falls, Texas
ORIENTAL OIL COMPANY, Dallas, Texas
OUACHITA REFINING COMPANY, Eldorado, Arkansas
PANHANDLE REFINING COMPANY, Wichita Falls, Texas
PHILLIPS PETROLEUM COMPANY, Bartlesville, Okla.
PIERCE GASOLINE COMPANY, Enid, Okla.
PIONEER OIL REFINING COMPANY, San Antonio, Texas
PRODUCERS & REFINERS CORPORATION, Tulsa, Okla.
PURE OIL COMPANY, Columbus, Ohio
RIO GRANDE OIL COMPANY, Los Angeles, Calif.
ROCK ISLAND REFINING COMPANY, Duncan, Okla.
ROXANA PETROLEUM CORPORATION, St. Louis, Mo.
SHAFFER OIL & REFINING COMPANY, Tulsa, Okla.
SKELLY OIL COMPANY, Kansas City, Mo.
SOUTHERN REFINING COMPANY, San Antonio, Texas
STAR PRODUCING & REFINING COMPANY, Fort Worth, Texas
TEXAS PACIFIC COAL & OIL COMPANY, Thurber, Texas
TEXHOMA OIL & REFINING COMPANY, Wichita Falls, Texas
TIDAL REFINING COMPANY, Tulsa, Okla.
TRANSCONTINENTAL OIL COMPANY, Pittsburgh, Pa.
VICKERS PETROLEUM COMPANY, Wichita, Kansas
WAGGONER REFINING COMPANY, Electra, Texas
WAITE PHILLIPS COMPANY, Tulsa, Okla.
WESTERN OIL CORPORATION, Tulsa, Okla.
WHITE EAGLE OIL & REFINING COMPANY, Kansas City, Mo.
WHITE STAR REFINING COMPANY, Detroit, Mich.

F. A. PIELSTICKER,
Vice President,
Skelly Oil Co.,
Eldorado, Kansas

P. M. MISKELL,
Manager,
Empire Refineries, Inc.,
Tulsa, Okla.

GEORGE D. LOCKE,
Vice President,
Barnsdall Refining Co.,
Chicago, Ill.

Photo by Moffat

OFFICERS

F. A. PIELSTICKER, President
P. M. MISKELL, Vice President
ROY B. JONES, Vice President
GEO. D. LOCKE, Vice President
HOWARD BENNETTE, Managing Director

BOARD OF DIRECTORS

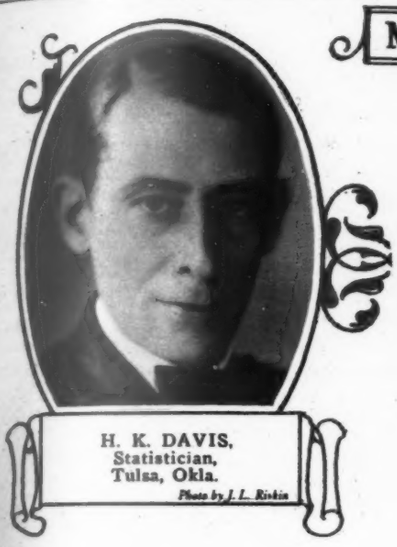
H. T. Ashton	Elliott Jones
Weston Atwood	W. L. Kistler
V. E. Bolene	A. E. Landsittel
D. E. Buchanan	J. H. Miller
W. K. Campbell	Geo. N. Moore
John L. Gray	C. C. Peppers
S. C. Collins	C. L. Mayhall
A. L. Derby	D. W. Moffit
H. B. Earhart	O. L. Cordell
W. P. Gage	O. D. Robinson
E. W. Goebel	H. A. Trower
N. H. Martin	J. L. Walsh
C. L. Henderson	A. F. Garrett
R. R. Irwin	G. G. Woodruff

ROY B. JONES,
President,
Panhandle Refining Co.,
Wichita Falls, Texas

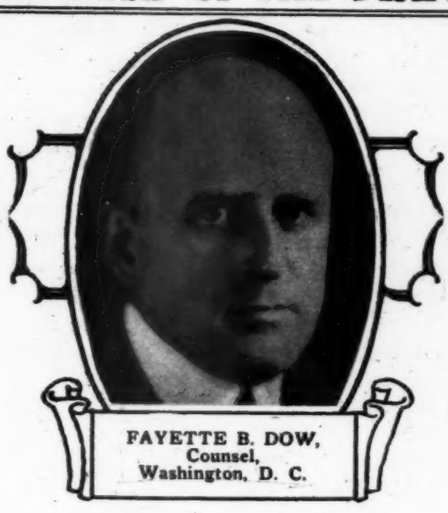
HOWARD BENNETTE,
Managing Director,
Tulsa, Okla.

Photo by J. L. Rivkin

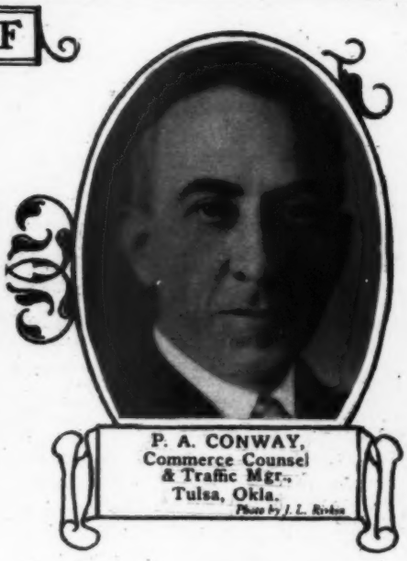
MEMBERS OF THE STAFF



H. K. DAVIS,
Statistician,
Tulsa, Okla.
Photo by J. L. Rivkin



FAYETTE B. DOW,
Counsel,
Washington, D. C.



P. A. CONWAY,
Commerce Counsel
& Traffic Mgr.,
Tulsa, Okla.
Photo by J. L. Rivkin

History of the Western Petroleum Refiners Association

By H. G. James, Secretary, American Oil Men's Association

The Western Petroleum Refiners Association grew out of travail. It found its birth in that period of petroleum development when the independent element was only beginning to come into acknowledged participation of its own. There was no auspicious heralding of its birth. however. The future of the independent refining branch of the industry, as a whole, was just as uncertain and precarious then as it had ever been.

Tacitus once said, "Adversity has no friends." Yet adversity has a way of bringing even contentious men together. Bowed down by the weight of uncertainty, and the conflicts of a new era, western refiners sought strength in conference, if not in unity. They got a glimpse of the fact that,

"Fellowship is Heaven, and lack of fellowship is Hell,

"Fellowship is Life, and lack of fellowship is Death."

It has always been true of petroleum that there has ever lurked among its followers, taken as a whole, a woeful absence of trust and confidence. Socially friends; commercially uncompromising competitors. That is one reason why we hear so much of impending government regulation and control.

The darkest hour of any industry is when the practice of unfair principles, suspicion, envy and inconsideration creep in.

Western refiners were attempting to gain a foothold. Some years before, before they figured in the Mid-Continent picture, Kansas had passed the maximum freight law and the anti-discrimination law, affording the refiner an opportunity that previously had not been vouchsafed to him. But this did not eliminate all of his hurdles. From 1904 until the World War, overproduction was a constant and ever-growing bugbear, and as I look back over the history of oil and recall the splendid ability of the industry to always meet abundantly every demand made upon it; when I reflect upon the unparalleled evolution of "the horseless carriage" and its enormous consumption of motor fuel, and the spectacle of the oil industry, not only meeting that demand, but maintaining a reserve supply far ahead of any possible contingency, I marvel at the temerity of the exhaustion alarmists of the country, and the continued fear on the part of some that there will soon be a serious shortage of petroleum.

And when we realize this magnificent performance has been accomplished without extortionate prices, with no evidence of improper combination, but rather in spite of a lack of proper co-ordination within the industry, the more we must be inclined to give respect to the leaders of the industry.

Western refiners organized on the theory that "Men who try to do something and fail, are infinitely better than those who try to do nothing and succeed."

The organizers had no definite program save the idea that divided they would surely fall, whereas united they might continue to stand. The first meeting was called by Kansas refiners. W. H. Isom, then general manager of the Cudahy Refining Company at Coffeyville, was chosen president, and Charles Martin of the Chelsea refinery was made secretary. Isom was a strong character and he is acknowledged to have done much for the industry during his incumbancy. But all the rough places could not easily be smoothed out, and at the end of his year he relinquished the office to D. W. Moffitt, at that time representing English capitalists as owners of the Kansas Oil & Refining Company, at Coffeyville. There was doubt as to the future of the organiza-

tion. It became evident it could not endure except some one be selected to give his entire time to its affairs. In July, 1914, it was decided to employ a salaried official, and the position of secretary and general manager was proffered H. G. James, who had recently disposed of the Independence Daily Reporter. Mr. James entered upon the discharge of his duties as secretary and general manager of the association with headquarters in Kansas City simultaneously with the beginning of the World War, August 1, 1914. At that time there were only about 15 members.

Moffitt remained as president and James as secretary until March, 1917, when, upon the resignation of James as secretary, Moffitt declined another term and James was elected president. During these years the association was active and attained considerable importance in national petroleum affairs. Its membership had increased to nearly 80.

At the suggestion of James, Robert L. Welch, then attorney for the Independent Jobbers' Association at Chicago, was elected secretary and general counsel.

It was through the efforts of the retiring secretary that the first great get-together meeting of Standard and independent oil men was held in Kansas City. This was quite a startling "adventure" on both sides. James went to New York and personally extended an invitation to A. C. Bedford, then president of the Standard Oil Co. of New Jersey, to address a meeting of independent oil men in Kansas City, Mo. Mr. Bedford recognized the serious developments of the war, the advantage of sympathetic understanding between the various elements of the industry, and finally accepted the invitation. Even at as early a date as this, the advisability of the formation of an organization that would embrace all branches of the industry was discussed and which, following the war, found expression in the inauguration of the American Petroleum Institute.

This first meeting of "the united industry" was held in the Muehlebach Hotel. It was heralded as the dawn of a new epoch in oildom. And, indeed, it so proved. I think I can safely say that Mr. Bedford was both surprised and gratified over the cordial reception that was accorded him. There had existed a general notion that there was a wide, impossible gulf between the Standard Oil Company and the independents. High-up officials of the Standard existed largely as myths, so far as the rank and file of the industry were concerned. Few had ever seen or met them.

The story of Petroleum's part in the war, so patriotically and splendidly performed, is well known. Oil was the only great essential industry that went through the conflict without governmental regulation or interference, and at the close its officiating chairman was decorated by foreign powers.

It is not believed this could have eventuated had it not been for the training of the independent refining branch of the industry through its associations, and this fact convinces me that,

> "Industry, economy, honesty and kindness form a quartette that will never be improved upon" in business.

Certainly it cannot be disclaimed that,

> "Success lies, not in achieving what you aim at, but in aiming at what you ought to achieve."

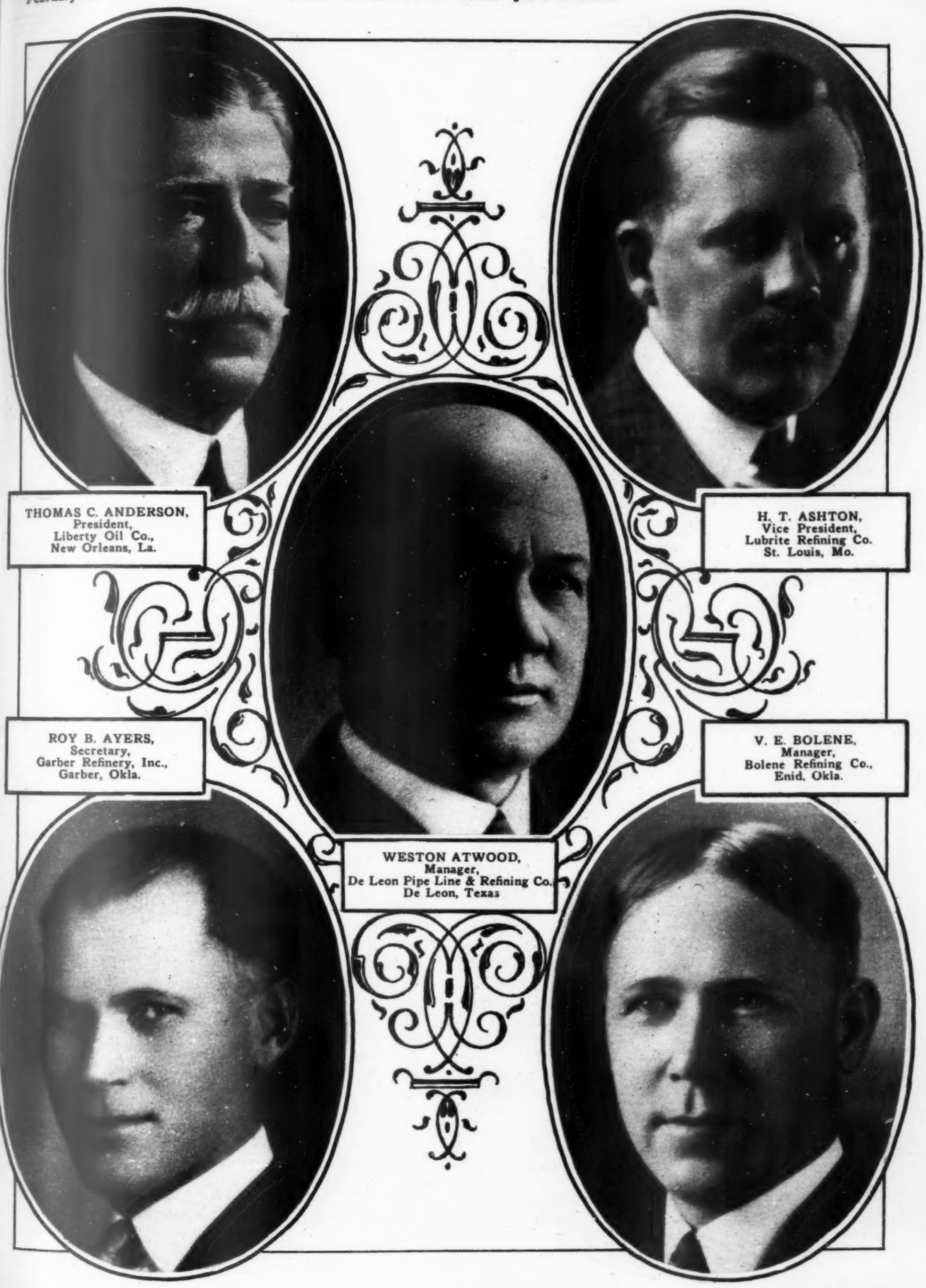
The oil industry demonstrated this during the war. Would that it might continue to do so now.

In the spring of 1918 James was succeeded as president by E. E. Schock of the Indiahoma Refining Company, who in succession was followed after one year, by Pat Malloy of the Constantin Refining Company. When the American Petroleum Institute was formed in 1919, R. L. Welch became its general counsel, and was succeeded as secretary of the refiners' association by Fred Lehmann, of Des Moines, Iowa. In 1921, W. D. Richardson, of the Meridian Petroleum Corporation, was elected president and H. G. James again became secretary, succeeding Mr. Lehmann.

The next year an entire change took place at the first convention the association ever held, at New Orleans. George N. Moore, of the Shaffer Refining Company, was chosen president, and John D. Reynolds, attorney and former jobbers' secretary, followed James. Since that year the association has held conventions annually and has moved its headquarters from Kansas City to Tulsa.

The present officers of the association are F. A. Pielsticker, of the Skelly Oil Company, President, and Howard Bennette, lawyer and experienced association man, secretary. With them at the helm the association is in good hands.

The Western Petroleum Refiners' Association has lived through the most trying period and witnessed the most rapid growth the oil industry has known. It has served the industry, and the public, well. It has justified its existence. Its work has not always been harmonious. It has not always been able to avoid mistakes, but it has never been guilty of knowingly or wilfully violating the laws governing business. Its members have differed personally; some have achieved, and some have not realized their ambitions; but as an organization they have always maintained an honorable record, and have advanced the general interests of petroleum. Remarkable strides, mechanically and scientifically, have been made in refining as a result of their cooperation. There have been times when it was necessary to pause and seriously reflect. We have gone through war and political upheavals. But the wise know that the spirit of war and politics in business is the night of industry, with neither moon nor stars, and these men have steered their ship of commerce out into the open channel, away from the crags. The Western Petroleum Refiners' Association has sailed a good course.



THOMAS C. ANDERSON,
President,
Liberty Oil Co.,
New Orleans, La.

H. T. ASHTON,
Vice President,
Lubrite Refining Co.
St. Louis, Mo.

ROY B. AYERS,
Secretary,
Garber Refinery, Inc.,
Garber, Okla.

V. E. BOLENE,
Manager,
Bolene Refining Co.,
Enid, Okla.

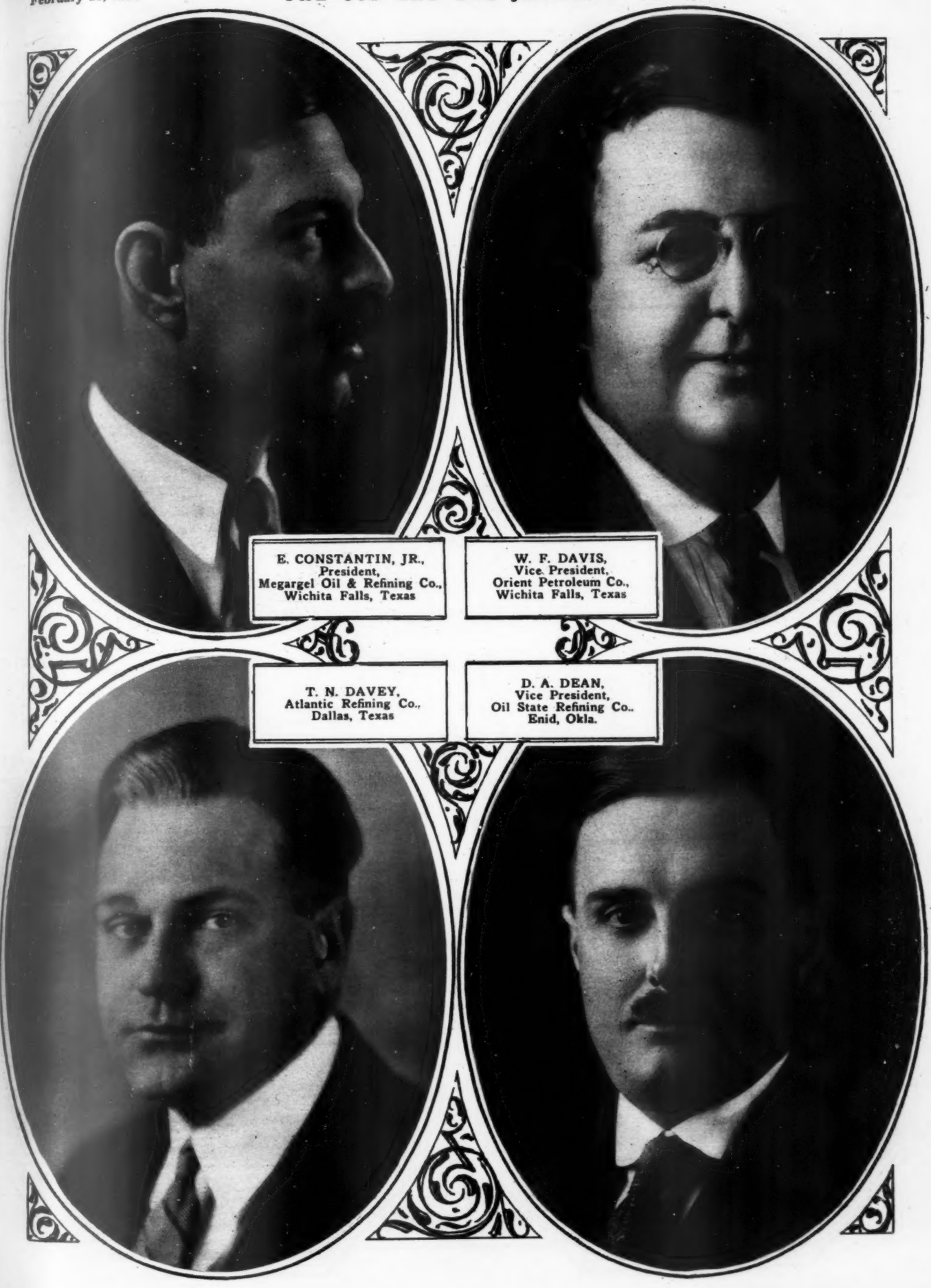
WESTON ATWOOD,
Manager,
De Leon Pipe Line & Refining Co.,
De Leon, Texas

D. E. BUCHANAN,
Vice President,
Chestnut & Smith Corp.,
Tulsa, Okla.

WALTER K. CAMPBELL,
President,
Western Oil Corp.,
Tulsa, Okla.

H. H. CHAMPLIN,
President,
Champlin Refining Co.,
Enid, Okla.

SAM C. COLLINS,
Vice President,
Marland Refining Co.
Ponca City, Okla.

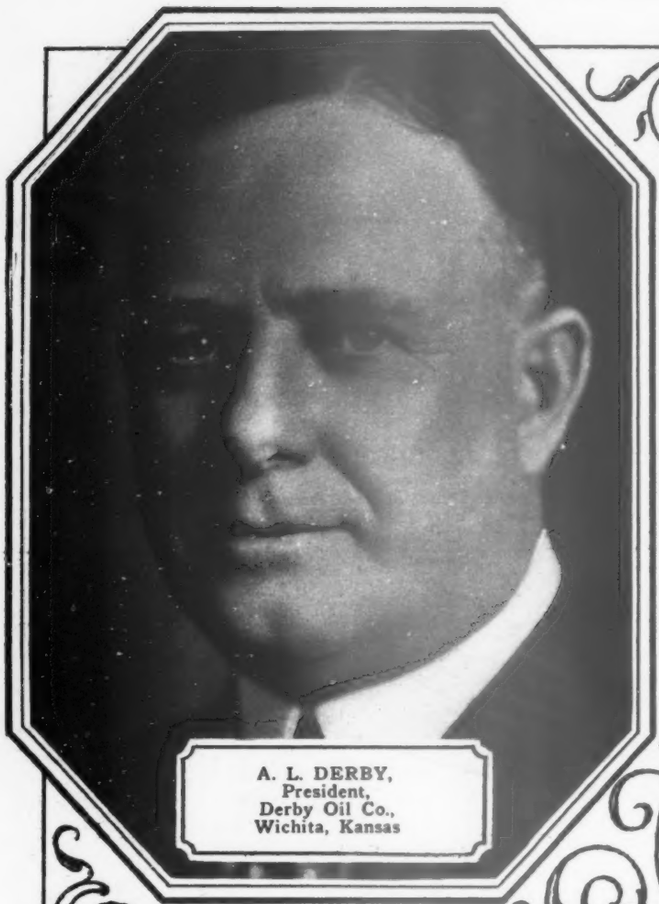


E. CONSTANTIN, JR.,
President,
Megargel Oil & Refining Co.,
Wichita Falls, Texas

W. F. DAVIS,
Vice President,
Orient Petroleum Co.,
Wichita Falls, Texas

T. N. DAVEY,
Atlantic Refining Co.,
Dallas, Texas

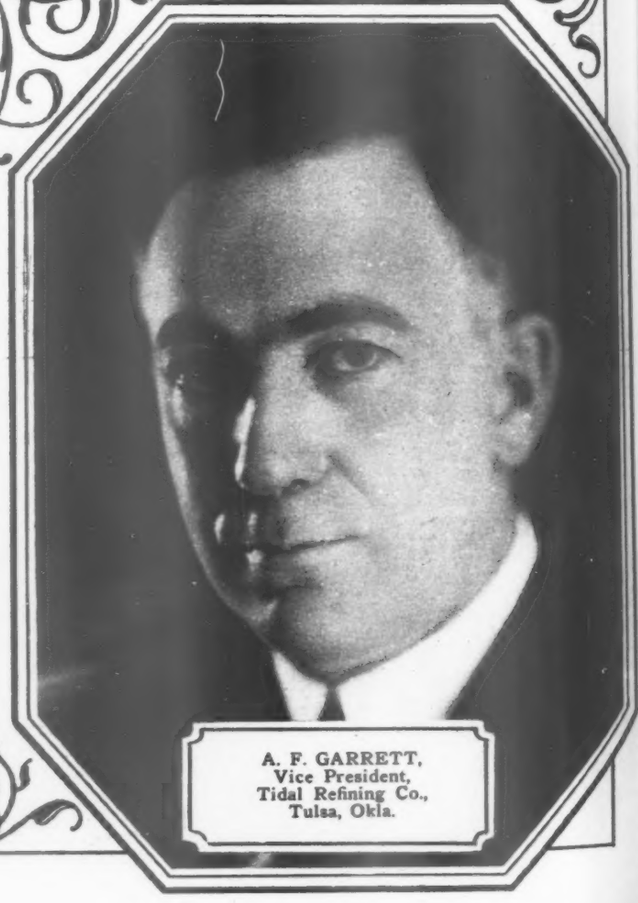
D. A. DEAN,
Vice President,
Oil State Refining Co.,
Enid, Okla.



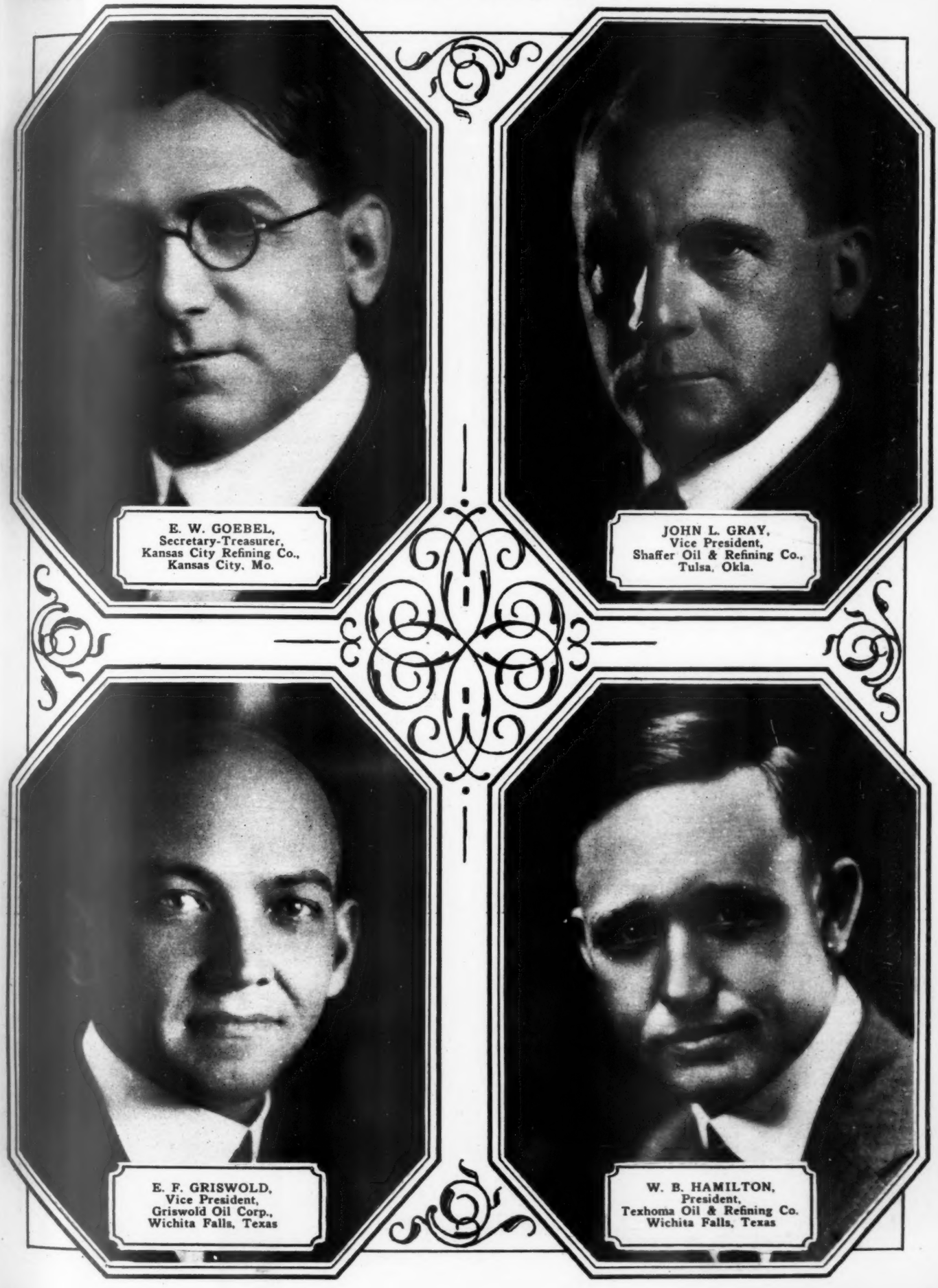
A. L. DERBY,
President,
Derby Oil Co.,
Wichita, Kansas

H. B. EARHART,
President,
White Star Refining Co.,
Detroit, Michigan

W. P. GAGE,
Pure Oil Co.,
Dallas, Texas



A. F. GARRETT,
Vice President,
Tidal Refining Co.,
Tulsa, Okla.



E. W. GOEBEL,
Secretary-Treasurer,
Kansas City Refining Co.,
Kansas City, Mo.

JOHN L. GRAY,
Vice President,
Shaffer Oil & Refining Co.,
Tulsa, Okla.

E. F. GRISWOLD,
Vice President,
Griswold Oil Corp.,
Wichita Falls, Texas

W. B. HAMILTON,
President,
Texhoma Oil & Refining Co.
Wichita Falls, Texas

W. M. HARRISON,
President,
Star Producing & Refining Co
Fort Worth, Texas

T. A. HELLING,
Secretary,
Eldorado Refining Co.,
Eldorado, Kansas

C. L. HENDERSON,
Vice President,
Vickers Petroleum Co.,
Wichita, Kansas

S. J. HERNSTADT,
President,
Gilmer Oil Co.,
Ardmore, Okla.

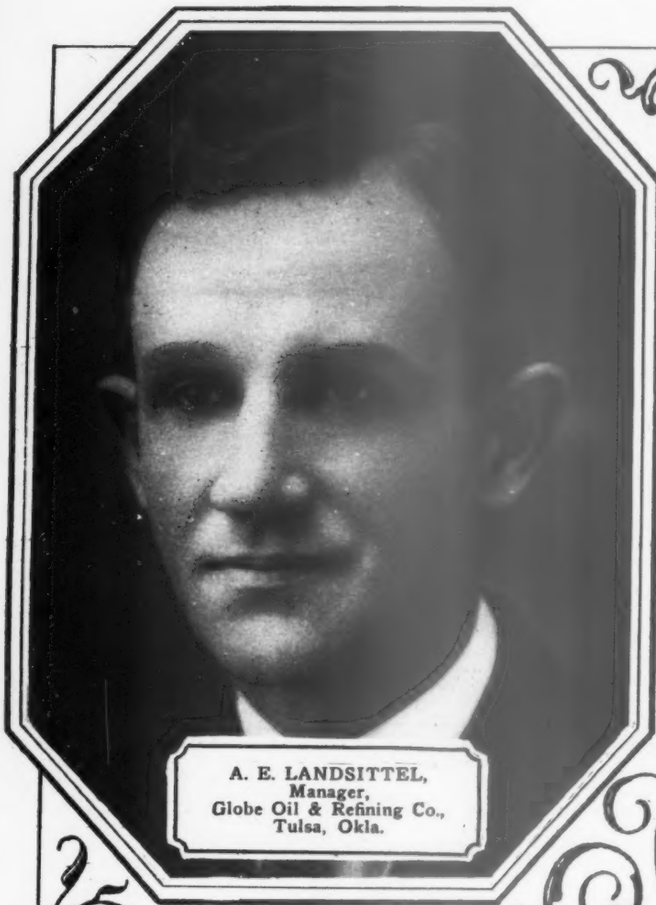
R. R. IRWIN,
Vice President,
White Eagle Oil & Refg. Co.
Kansas City, Mo.

V. E. JACKSON,
President,
Iowa Park Prod. & Refg. Co.,
Wichita Falls, Texas

ELLIOTT JONES,
President
Elliott Jones & Co., Inc.,
San Antonio, Texas

F. E. KISTLER,
Chairman of Board,
Producers & Refiners Corp.,
Tulsa, Okla.

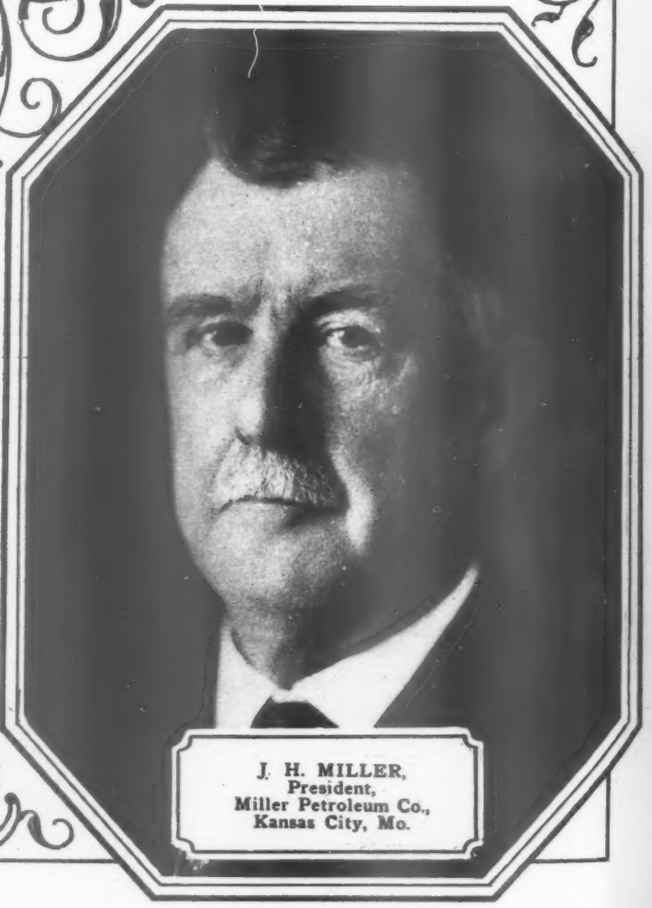
Photo by U. & U. Studios



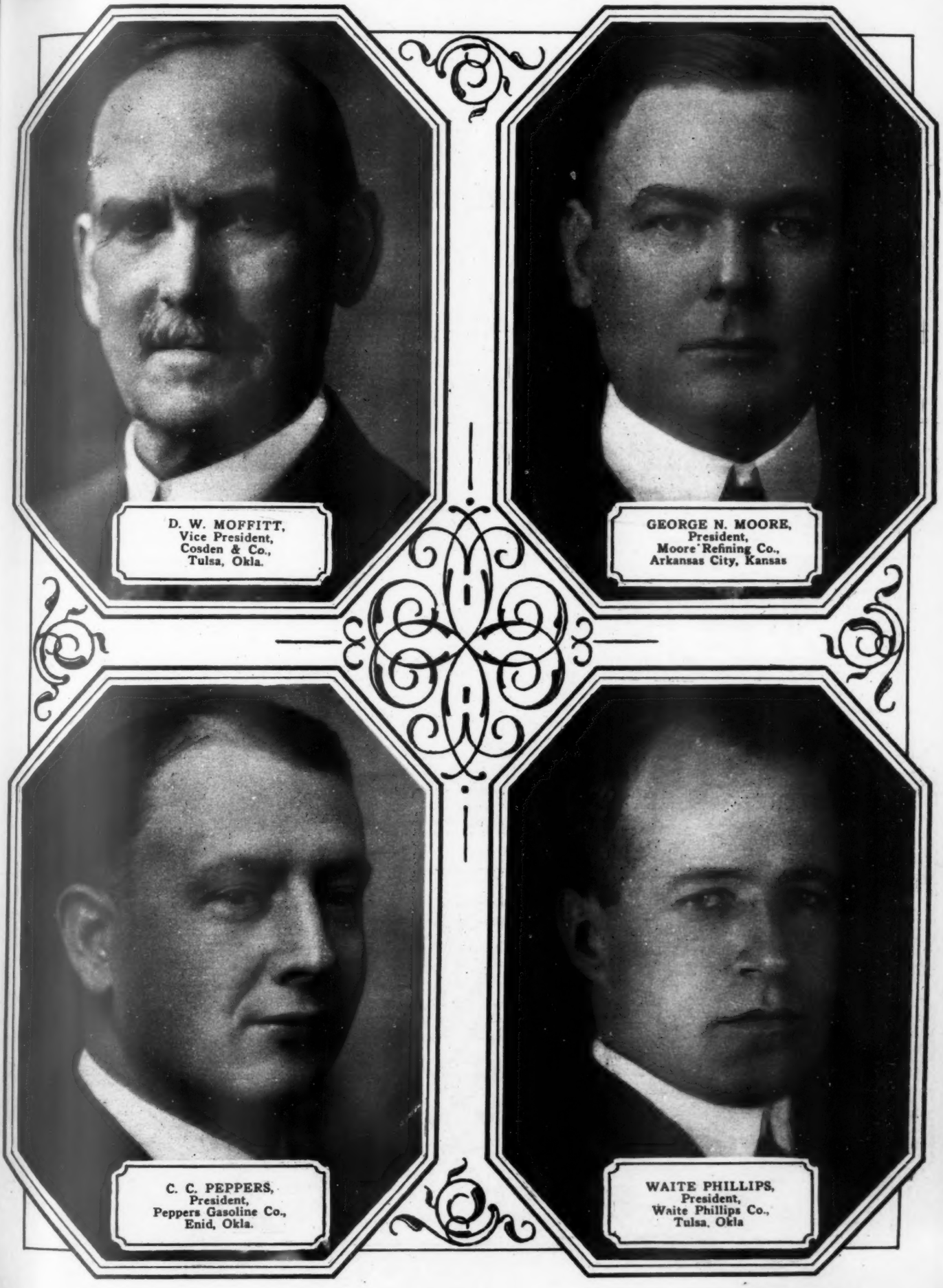
A. E. LANDSITTEL,
Manager,
Globe Oil & Refining Co.,
Tulsa, Okla.

L. M. LOCKHART,
Secretary-Treasurer,
Rio Grande Oil Co.,
Los Angeles, California

C. L. MAYHALL,
Vice President,
Imperial Refining Co. and
Kettle Creek Refining Co.
Tulsa, Okla.



J. H. MILLER,
President,
Miller Petroleum Co.,
Kansas City, Mo.



D. W. MOFFITT,
Vice President,
Cosden & Co.,
Tulsa, Okla.

GEORGE N. MOORE,
President,
Moore Refining Co.,
Arkansas City, Kansas

C. C. PEPPERS,
President,
Peppers Gasoline Co.,
Enid, Okla.

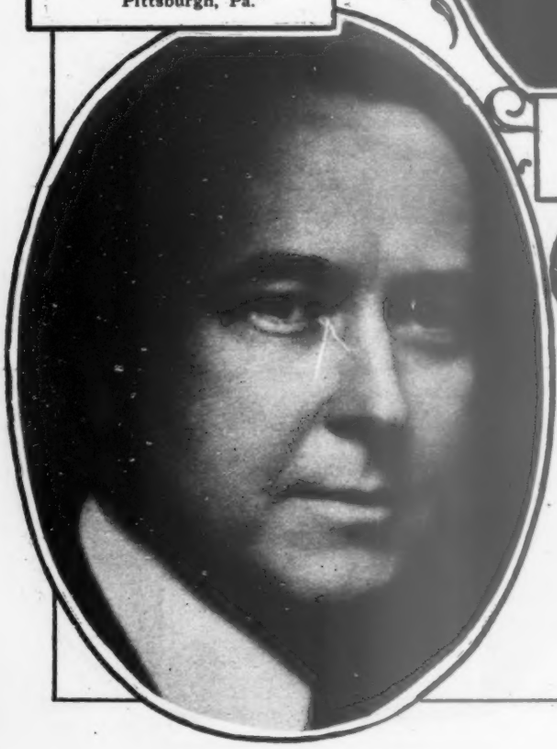
WAITE PHILLIPS,
President,
Waite Phillips Co.,
Tulsa, Okla

L. H. PRICHARD,
President,
Anderson-Prichard Oil Corp.,
Oklahoma City, Okla.

W. M. PRIDDY,
President,
American Refining Co.,
Wichita Falls, Texas

GEORGE L. RATCLIFFE,
Texas Pacific Coal & Oil Co.,
Thurber, Texas

O. D. ROBINSON,
Vice President,
Transcontinental Oil Co.,
Pittsburgh, Pa.



E. S. RULE,
President,
Golden Rule Refining Co.,
Wichita, Kansas

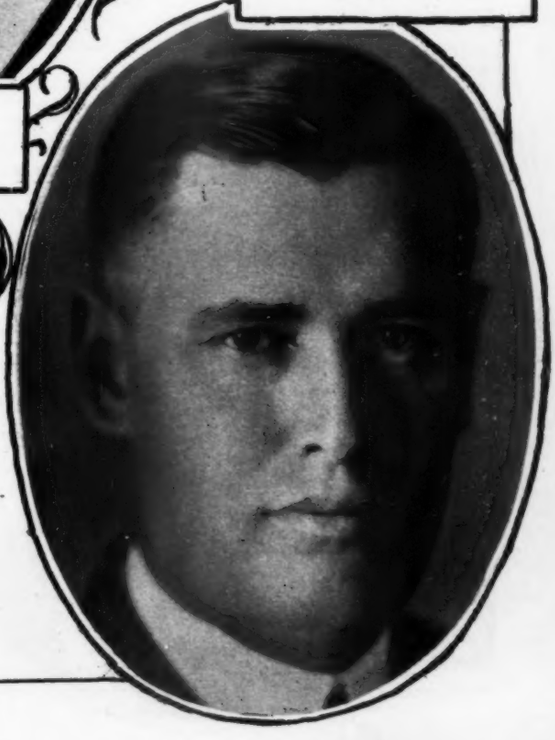
J. E. SHATFORD,
President,
Ouachita Refining Co.
Eldorado, Arkansas

L. B. SIMMONS,
Vice President,
Rock Island Refining Co.,
Duncan, Okla.

GEORGE W. SNEDDEN,
Vice President,
Lorraine Petroleum Co.,
Tulsa, Okla.

J. R. TRISLER,
Imperial Refining Co.,
Tulsa, Okla.

F. M. SMITH,
Vice President,
Oriental Oil Co.,
Dallas, Texas



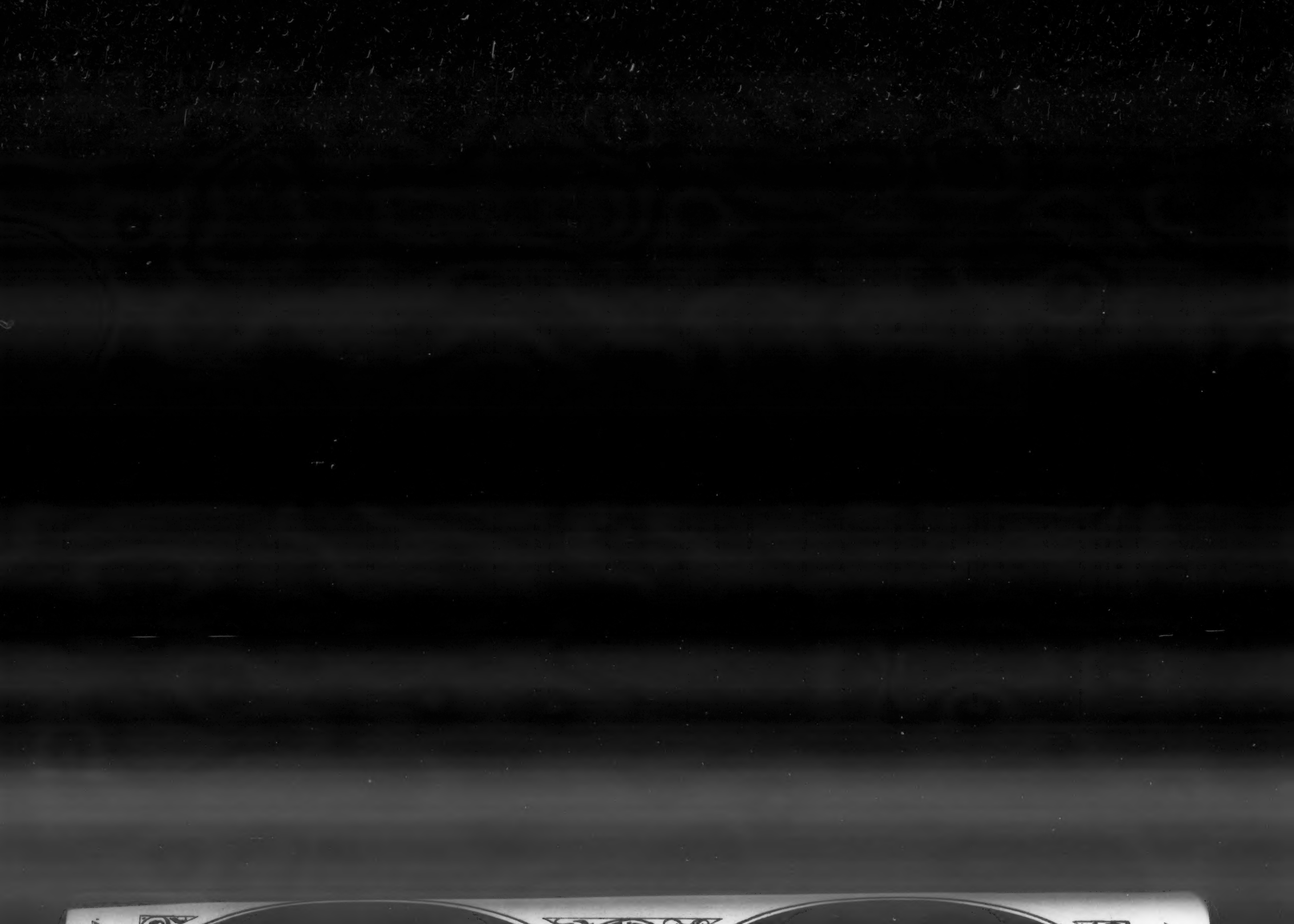
H. A. TROWER,
Sales Manager,
Phillips Petroleum Co.,
Bartlesville, Okla.

J. L. WALSH,
Manager Refinery Sales,
Mutual Oil Co.,
Kansas City, Mo.

REX H. WINGET,
General Manager,
Cushing Refg. & Gasoline Co.
Cushing, Okla.

G. G. WOODRUFF,
Vice President,
Roxana Petroleum Corp.,
St. Louis, Mo.

ALCO-GRAVURE, INC. Chicago - New York - St. Louis - Baltimore - Cleveland - Kansas City



The ADVERTISERS' INDEX

A

Acme Fishing Tool Co. 33
Acme Petroleum Co. 202
Adler, Joseph L 225
Ajax Iron Works 52-53
Ajax Rope Co., Inc. 192
American Appraisal Co. 199
American Car & Foundry Co. .....
American Cast Iron Pipe Co. 91-170
American Dyewood Co. 219
American Radiator Co. .....
American Schaeffer-Budenburg Corp... 132
American Sheet & Tin Plate Co. 187
American Telephone & Telegraph Co.....
..... Inside Front Cover
Ames Shovel & Tool Co. .....
Anderson Carl B. 227
Anderson & Anderson 228
Anderson Prichard Oil Corp. 175
Andrews Steel Co. 191
Armstrong Bros. Tool Co. 223
Athey Truss Wheel Co. .....
Atlas Ball Co. .....
Austin Co. 149
Axelson Machine Co. .....

B

Bash-Ross Tool Co. .....
Baker Casing Shoe Co. 224
Baldwin Chain & Manufacturing Co.....
Barber-Greene Co. .....
Barnickel, Wm. S. & Co. 51
Barnsdall Refining Co. 175
Bartlesville Supply Co. .....
Becker Specialty Co. .....
Bell Pump Co. .....
Bessemer Gas Engine Co. 14
Bignall & Keeler Machine Works 191
Biggs Boiler Works Co. .....
Black, Sivalls & Bryson, Inc. 167
Blaw-Knox Co. .....
Borden Co. 174
Bose Manufacturing Co. .....
Bovaird & Seyfang Manufacturing Co... 221
Bovaird Supply Co., The .....
Braden Co., The 155
Bradford Motor Works 184
Bridgeport Machine Co. .....
Bristol Co. .....
Broderick & Bascom Rope Co. .....
Brokaw, Dixon, Garner & McKee..... 228
Brown Instrument Co. .....
Brown & Thomsen 227
Buckeye Traction Ditcher Co. .....
Burns Tool Co. .....
Burt Manufacturing Co. 176
Busch-Sulzer Bros. Diesel Engine Co...
Butler Manufacturing Co. 83

C

California Pipe Line Machine Co. 222
Capital Abstract & Realty Co. 224
Carbondale Machine Co. 118
Carnegie Steel Co. 224
Caudill, Samuel J. 227
Central Steel Co. .....
Chain Belt Co. 37
Champion Machine & Forging Co. .....
Chaplin-Fulton Manufacturing Co..... 220
Champlin Refining Co. 177
Chapman Valve Manufacturing Co. .....
Chestnut & Smith Corp. 84-85
Chicago Bridge & Iron Works .....
..... Front Cover-66
Chicago Pneumatic Tool Co. 13
Clapp, Frederick G. 227
Clark Brothers Co. 136-137
Clark, Robert W. 227
Classified Wants 194-195-196
Climax Engineering Co. .....
Colonial Steel Co. 220
Columbian Rope Co. .....
Columbian Steel Tank Co. 159
Columbus Sucker Rod Co. 188
Compania Cartografica Venezolana..... 225
Conley Tank Car Co. 161
Continental Supply Co. 163
Cook Paint & Varnish Co. .....
Cooper, C. & G. Co. .....
Cox & Sons Co., The .....
Crane Co. .....
Cyclone Fence Co. .....

D

D. & B. Pump & Supply Co. .....
Darling Valve & Manufacturing Co....
Dart, E. M. Manufacturing Co.....
Davis Regulator Co. .....
Dawson Towel Supply Co. 224
Dayton Pipe Coupling Co. 4
Dearborn Chemical Co. 213
De La Vergne Machine Co. .....
Delta Electric Co. .....
Diamond Drill Carbon Co. 228
Diamond Drilling & Exploration Co. ... 223
Dickey-Ashby-Fountain Co. 224
Dixon, Joseph, Crucible Co. .....
Donovan Boiler Works, Inc. 193
Dorn, R. J., Co., Inc. .....
Dresser, S. R. Manufacturing Co. 29
Duff Manufacturing Co. 182
Dunn Manufacturing Co. .....

E

Eagle Picher Lead Co. 145
Eastern Torpedo Co. .....
Edward Valve & Manufacturing Co. 123
El Dorado Refining Co. 217
Elliott, Jones & Co., Inc. 169
Empire Refineries, Inc. 143
Equitable Meter Co. .....
Essex Brass Corp. .....
Exchange National Bank .....

F

Fairbanks-Morse & Co. 17-18
Federal Engineering Co. 228
Fenwick-Reddaway Manufacturing Co..
Fisher Governor Co. 131
Flexible Steel Lacing Co. .....
Foamite-Childs Corp. 127
Foggan Safety Sucker Rod Elevators... 227
Fohs, F. Julius 226
Foos Gas Engine Co. 220
Fort Worth Laboratories 225
Foster & Reiter 226
Foxboro Co., Inc., The .....
Franklin Valveless Engine Co. 7
Frick-Reid Supply Co. 39

G

Gantz Tank Co. .....
Gardner Governor Co. 139
Garlock Packing Co. 97
Gaso Pump & Burner Manufacturing Co.
.....Inside Back Cover
General American Tank Car Corp.....
General Electric Co. .....
General Motors Truck Co. .....
Golden Rule Refining Co. 214
Gomory, W. L. 226
Goodrich, B. F. Rubber Co., Inc.....
Goodrich, H. B. 228
Goodyear Tire & Rubber Co. 166
Gould Burner Co. .....
Goulds Manufacturing Co. 227
Graver Corp. 101
Greenhalgh, J. H. & Co. .....
Greene, Frank C. 226
Griscom-Russell Co. 133
Griswald Oil Corp. 134
Guiberson Corp. 8
Gurley, W. & L. E. 223

H

Halliburton, Erle P. .....
Harrisburg Pipe & Pipe Bending Co.....
Havana Manufacturing Co. .....
Hazard Manufacturing Co. .....
Henry, George W. 224
Herald Brothers 228
Hercules Corp. .....
Heydrick Mapping Co. 225
Hills-McCanna Co. 107-108
Hinderliter Tool Co. .....
Homestead Valve Co. 217
Hood, H. H. 228
Hooven & Allison Co. .....
Hope Engineering & Supply Co. 128
Hopkins, Edwin B. 226
Hough, Chas. N. Manufacturing Co..... 212
Houston Pump & Supply Co. 27
Hughes Tool Co. .....Back Cover
Hunt, Eugene 225
Hunt, Robert W. Co. 228
Huntley & Huntley 227

I

Illinois Glass Co. .....
Imperial Brass Manufacturing Co..... 176
Imperial Oil Marketing Co. 130
Industrial Construction Co. 135
Ingersoll-Rand Co. .....
International Derrick & Equipment Co. 54-55
International Harvester Co. of America 11
International Motor Co. .....
International Nickel Co. .....
International Supply Co. .....
Iowa Park Producing & Refining Co.... 218
Iron King Manufacturing Co. .....

J

Jarecki Manufacturing Co. 63
Jarvies Gas & Oil Burner Co.....
Jiffy Auto Chain Corp.....
Johns-Manville, Inc. .....
Jones, S. M. Co. 225
Jones Oil Well Reamer Co.....

K

Kansas City Bolt & Nut Co. .....
Kansas City Hay Press Co. .....
Kansas City Structural Steel Co. .....
Kaw Boiler Works Co. .....
Kellogg, M. W. Co. 213
Kelly & Jones Co. 99
Kelly-Springfield Tire Co. .....
Kennedy Valve Manufacturing Co..... 161
Kerr, John B. 226
Kesselman & Co. 222
Keuffel & Esser Co. .....
Kewanee Boiler Co. 189
Kinney Manufacturing Co. 180
Kirk, Charles T. 227

L

Lafe Speer Abstract Co. 224
Landis Machine Co. .....
Larkin & Co. .....
Larkin Packer Co. .....
Layne & Bowler Co. 57
Lebus Rotary Tool Works .....
Leidecker Tool Co. .....
Lewis, James O. 228
Linde Air Products Co. 1
Link-Belt Co. .....
Longhart Supply Co. 164
Longyear, E. J. Co. 226
Lorain Refining Co. 158
Lubrite Refining Co. 178
Lucey Manufacturing Corp. .....
Ludlow Valve Manufacturing Co..... 214
Lufkin Foundry & Machine Co. 31
Lufkin Rule Co. 225
Lugar, Jos. A. & Co. 225
Lunkenheimer Co. 215

M

Magnolia Petroleum Co. .....
Maloney Tank Manufacturing Co..... 186
Manzel Brothers Co. .....
Marion Machine, Foundry & Supply Co. 46-47
Marsh Gauge Pole Co. .....
Marshall, William C. 227
Matson, George C. 228
Matteson, W. G. 226
Merco-Nordstrum Valve Co. .....
Meriam Co. 228
Messimer, H. H. 227
Metric Metal Works .....
Miller Improved Gas Engine Co. .....
Miller, Max B & Co., Inc. .....
Moon Manufacturing Co. 222
Moore, Lee C. & Co., Inc. 12
Morrison Brothers .....
Munn & Co. 225
Myers, F. E. Bro. & Co. 225

Mc

McCord Radiator Manufacturing Co..... 197
McDonald, A. Y. Manufacturing Co.... 89
McGregor Working Barrel Co. 226
McIntosh & Seymour Corp. .....
McNutt, V. H. 226

N

National Airoil Burner Co. 228
National Carbon Co., Inc. 1
National Lead Co. .....
National Meter Co. 174
National Supply Co. 124-125
National Transit Pump & Machine Co..122
National Turnbuckle Derrick Co. .....
National Tube Co. .....
Noble Oil & Gas Co. 181
Norris Brothers .....
North American Car Co. .....
Northern Oil Information Bureau 225
Northrup Equipment Co. 222
Novo Engine Co. .....
Nugent Steel Castings Co. .....
Nye Tool & Machine Works .....

O

O'Brien Steel Construction Co. .....
Ohio Steel Foundry Co. 185
Oil Conservation Engineering Co..... 153
Oil Insurance Association 120
Oil State Refining Co. 160
Oil Well Improvements Co. .....
Oil Well Supply Co. 61
Omar Refining Co. 141
Oriental Oil Co. 216
Orient Petroleum Co. 178
Oster Manufacturing Co. 168
Oxweld Acetylene Co. 1

P

Page Fence & Wire Products Association 126
Parkersburg Machine Co. .....
Parkersburg Rig & Reel Co. 10
Pattin Brothers Co. 154
Patrick, R. S. .....
Pennzoil Co., The .....
Peppers Gasoline Co. 180
Petroleum Iron Works .....
Petroleum Technical Bureau .....
Pforzheimer, Carl H., & Co..... 218
Phillips Petroleum Co. 156
Pioneer Oil & Refining Co. 150
Pioneer Tank & Boiler Co. 226
Pittsburgh-Des Moines Steel Co. .....
Pittsburgh Meter Co. 164
Pittsburgh Reinforced Brazing & Machine Co. 93
Plibrico Jointless Firebrick Co..... 114
Powell, William Co. 117
Power Manufacturing Co. .....
Power Piping Co. 146
Power Specialty Co. 113
Prescott, The Co. 148
Prest-O-Lite Co., Inc. 1
Producers & Refiners Corp. 165
Pure Oil Co. 147
Pyle-National Co. 95

Q

Quesada, Irving G. 225

R

Reading Iron Co. .....
Reading Steel Castings Co. 227
Reed Roller Bit Co. 183
Refinery Supply Co. 216
Regan Forge & Engineering Co. 43
Reid, Joseph Gas Engine Co. 221
Republic Iron & Steel Co. .....
Republic Rubber Co. .....
Republic Supply Co. 15
Rich, John L. 227
Ring, Dewitt T. 228
Robinson, Heath M. 226
Robinson Packer Co. .....
Rock Island Plow Co. 223
Roots, P. H. & F. M. Co. 87
Ross-Meehan Foundries 226
Rotary Disc Bit Co. .....
Ryerson, Joseph T. & Son 237

S

Sand Springs Water Co. 224
Schley, Jack A. 226
Shaffer Oil & Refining Co. 157
Sherwin-Williams Co. 110-111
Shippers Car Line Co. 222
Sinclair Refining Co. 207
Sivyer Steel Casting Co. .....
Skelly Oil Co. 161
Smith, George H., Steel Casting Co.... 228
Smith Separator Co. 157
Sonken-Galambra Corp. 163
South Chester Tube Co. 9
Southern Cornice Works .....
Southern Refining Co. 160
Spang & Co. 59
Spellman, John M. 211
Spengler Core Drilling Co. .....
St. Louis Steel Casting Co. .....
Stalder, Walter 226
Standard Diamond Drill Co. .....
Standard Engineering Co. .....
Standard Seamless Tube Co. .....
Stanley Belting Corp. .....
Star Drilling Machine Co. .....
Sterling Steel Co. 225
Stewart, Irvine E. 228
Sullivan Machinery Co. 224
Superior Tube Co. .....
Swartwout Co., The 179

T

Tagliabue, C. J., Manufacturing Co.....
Taylor Instrument Co. 181
Taylor-Wharton Iron & Steel Co. 5
Templeton, Kenly & Co., Ltd. .....
Texas City Terminal Railway Co.....
Texas Co., The 172
Texas Gulf Sulphur Co. .....
Texas Pacific Coal & Oil Co. 219
Texhoma Oil & Refining Co. 171
Tide Water Oil Co. .....
Tidal Refining Co. 215
Titusville Forge Co. .....
Titusville Iron Works .....
Toledo Pipe Threading Machine Co. 223
Trimont Manufacturing Co. .....
Trumble Gas Trap Co. .....
Truscon Steel Co. 142
Tulsa Boiler & Machinery Co. 215
Tulsa Ice Co. 224

U

United Iron Works 144
United States Cast Iron Pipe & Foundry Co. .....
U. S. Tool Co. .....
Universal Oil Products Co. 105

V

Vickers Petroleum Co. 168
Vogt Brothers Manufacturing Co.....
Vogt, Henry, Machine Co. 129

W

Wall Rope Works, Inc. .....
Walworth Manufacturing Co. .....
Warren City Tank & Boiler Co. 172
Washburne, C. W. 226
Waukesha Motor Co. .....
Wertsberger Derrick Co. .....
Westcott & Greis 103
Westcott Valve Co. .....
Western Bank Supply Co. 224
Western Iron Foundry Co. 214
Western Machinery Co. 41
Westinghouse Electric & Mfg. Co. 3-8
White Co. .....
Whitlock Cordage Co. .....
Wickwire-Spencer Steel Corp. .....
Wico Electric Co. 49
Williams, J. H., & Co. 238
Williamsport Wire Rope Co. 162
Wilson & Snyder .....
Wilson Oil Tool Corp. 6
Wilson Welder & Metals Co. 131
Wirth, Alfred & Co. .....
Wood & Wood 227
Worthington Pump & Machinery Corp... 119
Wright, Harry F. 226
Wright Manufacturing Co. 193

Y

Yale & Towne Manufacturing Co.....

Z

Zero Hour Torpedo Co. .....